

ESD TDR 64-45
Phase I
Volume IV
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FEDERAL ELECTRIC CORPORATION
BIG RALLY II COMMUNICATION SYSTEM
TEST DATA
PHASE I
VOLUME IV

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FEDERAL ELECTRIC CORPORATION

an associate of

INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION

AD604911

FEDERAL ELECTRIC CORPORATION
BIG RALLY II COMMUNICATION SYSTEM

TEST DATA

PHASE I

VOLUME IV

ESD-TDR 64-451

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REVISIONS

NO.	DESCRIPTION	DATE	APPROVED
1			
2			
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8			
9			
10			

A ORIGINAL ISSUE

SYM ZONE

DESCRIPTION

DATE APPROVED

APPROVALS	SIGNATURE & DATE
DRAWN	<i>S. R. Smith</i> 6/19/64
CHECKED	<i>H. E. Smith</i> 6/19/64
MECH	
ELECT	
STDS	
GROUP	
NEXT ASSEMBLY	FIRST USED ON
APPLICATION	

FEC	FEC SOURCE
OTHER	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES AND
INCLUDE CHEMICALLY APPLIED
OR PLATED FINISHES
COML. TOL. APPLY TO STOCK SIZES




FEDERAL ELECTRIC CORPORATION
PARAMUS INDUSTRIAL PARK
PARAMUS, NEW JERSEY
A SUBSIDIARY OF INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION

TEST DATA
PHASE I
VOLUME IV

CODE IDENT. NO.	DWG.	SIZE
14842	A	
SCALE	FEC NO.	SHEET
		6271955 A

LIST OF MATERIALS

[illegible]

 FEDERAL SERVICE A SUBSIDIARY OF INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION		FEDERAL ELECTRIC CORPORATION PARAMUS INDUSTRIAL PARK PARAMUS, NEW JERSEY	
PREPARED BY: SEE FILE DATE:		CHECKED BY: DATE:	
CODE IDENT. NO. 14842		DWG A SIZE	LM 6271955A
		FEC NO.	SHEET

FEDERAL ELECTRIC CORPORATION

BR II/91

BIG RALLY II PROJECT

SITE GPA
ID sending

DATA SHEET

SYSTEM TEST PHASE 1

ID to GPA

1. INSERTION LOS VS. FREQUENCY

FREQUENCY

EXPECTED

REFERENCE	1000 cps											
300	With respect to 1000 cps	REF										
400	" " " " " "											
600	" " " " " "											
2400	" " " " " "											
3000	" " " " " "											
3400	" " " " " "											

71.0 ±.5 dbm

73.1 ±7.4 db

73.1 -4.6 db

73.1 -3.1 db

73.1 -3.1 db

73.1 -4.6 db

73.1 -7.4 db

HIGH GROUP CHANNELS

FREQ.	1	2	3	4	5	6	7	8	9	10	11	12
1000	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0
300	71.0	73.2	73.8	76.5	74.8	74.5	75.2	78.0	74.3	76.7	78.5	75.0
400	6.8	5.3	5.5	6.5	6.0	6.3	7.4	7.5	6.0	6.7	7.1	6.8
600	6.8	7.5	7.5	7.4	7.4	7.3	7.2	7.5	7.3	7.6	7.6	7.4
2400	8.2	7.5	7.6	7.0	7.1	7.5	6.8	8.2	7.5	6.2	6.0	8.0
3000	8.3	7.2	7.4	6.0	6.5	6.4	7.6	7.8	7.2	5.4	6.5	8.3
3400	7.8	6.2	6.3	6.5	5.3	5.8	6.8	5.1	7.2	5.5	5.0	6.8

NOTE:1 ALL READINGS ARE POSITIVE

2 READINGS TAKEN AT SITE GPA WITH STATION IDSENDING THE TONES.

DATE 9/4/63

TESTER

SUPERVISOR

QUALITY ASSURANCE

GEEIA

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PHASE ONE
SYSTEM TESTS

BR11/91
SITE GPA
ID Sending

Insertion loss vs. Frequency Test

FREQ.	CHANNELS 1 thru 12 of the HIGH GROUP											
	1	2	3	4	5	6	7	8	9	10	11	12
1000 cps	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
300 cps	7.0	3.1	4.2	6.6	3.8	4.1	4.7	7.4	4.1	4.0	8.0	4.7
400 cps	6.8	5.0	5.7	6.6	6.1	5.8	6.4	6.5	6.1	6.0	7.0	6.6
600 cps	7.0	6.8	7.5	7.7	7.7	7.0	7.5	6.9	7.5	7.0	7.3	7.3
2400 cps	7.8	7.5	8.1	7.4	7.3	7.0	7.2	8.0	7.5	5.9	6.2	7.9
3000 cps	8.4	7.1	8.5	6.2	6.8	5.5	7.6	7.6	7.0	4.8	6.3	8.3
3400 cps	8.0	5.2	6.7	6.6	6.3	5.1	6.8	4.2	6.7	4.6	5.3	6.8

NOTE: 1 READINGS WERE TAKEN AT SITE GPA USING HP-400D VTVM

2 A ~~SEVERE~~ VARIATION OF APPROXIMATELY 1db WAS OBSERVED ON THE METER WHILE THESE RECORDINGS WERE BEING MADE.

3. All Reading Are Positive

DATE

9/6/63

TESTER

QUALITY ASSURANCE

GEEIA REP.

2nd hi group test - After repair of
filter AT SITE GK

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PHASE ONE

SYSTEM TESTS

DA TA SHEET

BRIL/91
SITE GPA

ID SENDING

1. INSERTION LOSS VS FREQUENCY

LOW GROUP

EXPECTED

1000 cps

REFERENCE

-7.0 \pm .5 dbm

WITH RESPECT TO 1000 cps REFERENCE

300	-12.6 db
400	-7.0 db
600	-4.0 db
2400	-4.0 db
3000	-7.0 db
3400	-12.6 db

FREQ. CHANNELS OF THE LOW GROUP

	ID	7	8	9	10	11	6*	1	2	3	4	5	12
	GPA	1	2	3	4	5	6	7	8	9	10	11	12
1000		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
300		7.7	5.5	6.8	7.4	5.6	2.1	7.0	9.2	5.1	5.5	10.9	6.1
400		7.4	5.5	6.5	6.8	7.7	2	7.0	6.8	6.3	6.7	7.8	6.8
600		7.7	7.4	7.6	8.0	2.8	3.5	8.0	6.9	8.1	8.0	7.7	7.2
2400		7.4	8.1	9.0	8.5	10.9	12.2	8.7	7.3	8.6	7.6	8.5	7.4
3000		7.3	8.3	8.7	8.2	9.8	11.8	8.7	6.1	8.7	5.6	8.2	7.0
3400		7.0	4.1	6.5	7.2	8.5	7.0	7.3	1.8	6.3	4.2	6.7	4.9

NOTE 1. LEVEL VARIATIONS OF .3 db MAX. WERE OBSERVED ON THE METER WHILE THESE READINGS WERE BEING TAKEN.

2. THESE READINGS WERE TAKEN AT SITE GPA WITH SITE ID SENDING THE TONES.

DATE 6 Sep 1963SITE SUPERVISOR [Signature]TESTER [Signature]QUALITY ASSURANCE [Signature]GEEIA [Signature]

*Ch6 ok on retest. See next sheet.

EUROPEAN REGION
GROUND ELECTRONICS ENGINEERING-INSTALLATION AGENCY
UNITED STATES AIR FORCE
APO 794, U S Forces



REPLY TO
ATTN OF:

Team Leader, Big Rally II T & A.

SUBJECT:

Retests, BR II Phase I System Tests

23 September 1963

TO:

Test Director
Big Rally II
APO 794, US Forces

1. Following are retests of specific items that did not originally successfully pass the Phase I System Test.

a. Insertion Loss vs Frequency: (21 Sep 63)

Channel #6 Low Group

1000N REF $\pm 7.0 - (\pm 0.5)$

300 +4.5

400 +6.25

600 +7.8

2400 +6.8

3000 +6.4

3400 +3.9

*Channel #11 Low Group

1000N REF _____ +7 (± 0.5)

300 _____

400 _____

600 _____

2400 _____

3000 _____

3400 _____

Gerald R. Pelant
GERALD R. PELANT
T&A Team Leader

*Bad Channel Modulator at ID.

FEDERAL ELECTRIC CORPORATION
BIG RALLY II TEST PROCEDURES
SYSTEMS TEST

Loop Test

This errata sheet should be attached to errata sheet, Systems Test, dated 22 August 1963. (For ID-GPA) *insertion loss vs frequency*

HIGH GROUP

<u>Freq.</u>	<u>Limits</u>	<u>Channels</u>											
		1	2	3	4	5	6	7	8	9	10	11	12
100	+7.0 ± 0.5db	* +7	+7	+7	+7	+7	+7	+7	+7	+7	+7	+7	+7
300	+3.1 - 7.4	+8.6	+2.5	+2.5	+3.5	+3.6	+5.2	+5.2	+5.6	+4	+3.5	+5	+4.6
600	+3.1 - 4.6	+8	+4.5	+6.2	+5.3	+6.2	+6	+5.6	+5	+6.3	+6.8	+6.1	+7.2
1000	+3.1 - 3.1	+7.7	+7	+8	+8.2	+8.4	+7.8	+7.8	+6.6	+8.1	+8.4	+8	+7.6
2000	+3.1 - 3.1	+9.6	+8.2	+9.6	+8	+7	+7.5	+6.9	+8.5	+8.1	+5.6	+6	+8.7
3000	+3.1 - 4.6	+10	+7.2	+9.2	+6.2	+5.7	+5.8	+8.6	+7.2	+7.7	+3.8	+6.5	+8
4000	+3.1 - 7.4	+9.5	+5.2	+7	+6.2	+5	+4	+6.9	+2.5	+6.7	+3	+4.6	+4.6

Channel 1 of High Group is affected 0.3db worse because of Thru Group Filter. On Loop it is $2 \times 0.3 = 0.6$ db.

LOW GROUP

<u>Freq.</u>	<u>Limits</u>	<u>Channels</u>											
		1	2	3	4	5	6	7	8	9	10	11	12
1000	+7. ± 0.5db	+7	+7	+7	+7	+7	+7	+7	+7	+7	+7	+7	+7
2000	+4.0 - 12.6	+3.4	+6.9	+8.2	+5.2	+8.2	-1.6	+10.5	+4.9	+7.1	+9	-3.0	+5.9
3000	+4.0 - 7.0	+6.5	+5.6	+7.5	+7.2	+5.1	(-1)	+8.9	+4.6	+6.5	+7.4	(-1.0)	+7.2
4000	+4.0 - 4.0	+8.1	+7.2	+9.0	+6.8	+7.5	+5	+8.5	+7.5	+8.4	+9.0	+3.6	+7.6
5000	+4.0 - 4.0	+8.5	+7.2	+9.2	+7.5	+8.5	+10.5	+9.0	+9.0	+8.9	+8.5	+9.8	+7.8
6000	+4.0 - 7.0	+8.5	+4.9	+10	+3.5	+7.5	+9.5	+8.5	+6.5	+9.0	+7.5	+8.1	+6.8
7000	+4.0 - 12.6	+11.2	-2.5	+4.5	+2.9	+5.5	+4.6	+6.6	-1.6	+5.8	+7.0	+6.1	-4.5

* REFERENCE LEVEL ADJUSTED AT V.F. *OUT* FOR 17.0-5 DBM.

System Test Figures

NOTE: LOW GROUP, CHANNELS 5, 6 & 12 NORMALLY TERMINATE AT IC. FOR PURPOSE OF TEST THEY WERE PATCHED THRU TO E.P.A.
CHANNELS 6 & 11 OF LOW GROUP DID NOT MEET SPEC. ON ALL FREQUENCIES.

6 Sept. 63

J.B.E. Resp.

J.R. / 1-5

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST PHASE I

1. INSERTION LOSS VS. FREQUENCY

<u>Frequency</u>	<u>Expected</u>	<u>Actual</u>
Circuit ID to IGC		
1000	$\pm 7 \pm 0.5$ dbm	_____ dbm
With respect to 1000 cps level		
300	$\pm 3.9 - 11.0$ dbm	_____ dbm
400	$\pm 3.9 - 4.1$ dbm	_____ dbm
600	$\pm 3.9 - 1.8$ dbm	_____ dbm
2400	$\pm 3.9 - 2.0$ dbm	_____ dbm
3000	$\pm 3.9 - 3.5$ dbm	_____ dbm
3400	$\pm 3.9 - 8.6$ dbm	_____ dbm

Circuit: ID to GEL		
	<i>CH 9 - Hi Group</i>	
1000	$\pm 7 \pm 0.5$ dbm	<u>± 6.5</u> dbm
With respect to 1000 cps level		
300	$\pm 7.7 - 16.7$ dbm	<u>± 3.3</u> dbm
400	$\pm 7.7 - 6.1$ dbm	<u>± 5.5</u> dbm
600	$\pm 7.7 - 3.4$ dbm	<u>± 7.5</u> dbm
2400	$\pm 7.7 - 4.0$ dbm	<u>± 8.3</u> dbm
3000	$\pm 7.7 - 7.1$ dbm	<u>± 1.7</u> dbm
3400	$\pm 7.7 - 15.8$ dbm	<u>± 1.5</u> dbm

Note: 1000 ~ REFERENCE adjusted at VFA Hec. To $\pm 7 \pm 0.5$ DBM
OUT

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST PHASE I

1. INSERTION LOSS VS. FREQUENCY

<u>Frequency</u>	<u>Expected</u>	<u>Actual</u>
Circuit ID to IGC		
1000	$\pm 7 \pm 0.5$ dbm	_____ dbm
With respect to 1000 cps level		
300	$\pm 3.9 - 11.0$ dbm	_____ dbm
400	$\pm 3.9 - 4.1$ dbm	_____ dbm
600	$\pm 3.9 - 1.8$ dbm	_____ dbm
2400	$\pm 3.9 - 2.0$ dbm	_____ dbm
3000	$\pm 3.9 - 3.5$ dbm	_____ dbm
3400	$\pm 3.9 - 8.6$ dbm	_____ dbm
Circuit: <u>ID to GEL</u> OH 7 Lc GROUP.		
1000	$\pm 7 \pm 0.5$ dbm	<u>± 7.5</u> dbm
With respect to 1000 cps level		
300	$\pm 7.7 - 16.7$ dbm	<u>± 12</u> dbm
400	$\pm 7.7 - 6.1$ dbm	<u>± 11</u> dbm
600	$\pm 7.7 - 3.4$ dbm	<u>± 10.5</u> dbm
2400	$\pm 7.7 - 4.0$ dbm	<u>± 9.6</u> dbm
3000	$\pm 7.7 - 7.1$ dbm	<u>± 8.8</u> dbm
3400	$\pm 7.7 - 15.8$ dbm	<u>± 7.7</u> dbm

NOTE: 1000 cps REFERENCE ADJUSTED AT VF REC TO $\pm 7 \pm 0.5$ DBM.
OUT

6 Sept. 63

Sheet 1 of 3

BGB

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST PHASE I

I. ENVELOPE DELAY DISTORTION

Group No. LOW

1D/GPA.

ACTUAL

Channels	1	2	3	4	5	6	7	8	9	10	11 ⁺	12
To Station Frequency												
300												
500												
700												
900	SS 6.6 MR 100	6.6 90	6.2 75	6.3 120	6.0 50	6.2 70	6.7 100	6.6 50	6.2 100	6.3 120	6.7 40	7.7 65
1000	SS 6.7 MR 0	6.5 0	6.1 0	6.2 0	5.9 0	6.1 0	6.6 0	6.4 0	6.1 0	6.2 0	6.2 0	7.7 0
1200	SS 6.4 MR 130	6.3 55	6.0 10	6.1 25	5.7 110	5.9 105	6.4 40	6.1 140	6.0 10	6.0 95	6.0 10	7.5 130
1400	SS 6.5 MR 75	6.3 100	6.0 120	6.1 125	5.9 55	5.9 170	6.4 140	6.2 90	6.0 100	6.2 25	6.4 70	7.6 150
1600	SS 6.5 MR 150	6.4 75	6.2 55	6.2 165	6.0 110	6.0 155	6.6 75	6.3 145	6.2 10	6.3 165	6.7 30	7.7 135
1800	SS 6.5 MR 120	6.4 100	6.2 40	6.2 135	6.0 35	6.0 135	6.6 30	6.3 130	6.2 10	6.3 90	6.6 65	7.6 120
2000	SS 6.5 MR 120	6.4 40	6.2 75	6.2 130	5.9 80	6.0 10	6.6 30	6.3 80	6.2 50	6.3 55	6.4 160	7.9 140
2200	SS 6.5 MR 35	6.3 35	6.2 5	6.2 90	5.9 25	5.9 140	6.4 140	6.3 25	6.2 35	6.2 15	6.4 135	7.1 1300
2400	SS 6.5 MR 35	6.3 85	6.2 10	6.2 145	5.9 90	5.9 145	6.6 75	6.3 30	6.2 10	6.2 100	6.5 150	7.1 1500
2600	SS 6.4 MR 90	6.3 90	6.2 70	6.2 140	5.9 160	6.0 70	6.3 50	6.3 25	6.1 45	6.2 140	6.6 155	7.1 1200
2800	Note: MR = The actual reading on the meter in milliseconds. (1000 = 1 second)											
3000	READING OF 0.45 IS EQUAL TO 45 MICROSECONDS											
3200	SS = THE SWITCH SETTING ON THE DELAY MEASURING SET. (100 = 100 MICROSECONDS)											
3400	CHANGE IN 10th OF 1 MILLISECOND. THIS CHANGE OF 1.3 = 1300 MICROSECONDS											

SS = SWITCH SETTING

MR = METER READING

Sheet 1 of 2

+ BAND PASS FILTER AT STATION 1D FULLY
INCORRECT FREQUENCY RESPONSEMR failed
1000000

7 Sept 63

1-8

FEDERAL ELECTRIC CORPORATION

BR11/92

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST PHASE I

I. ENVELOPE DELAY DISTORTION

1D/GPA

Group No. LOW

ACTUAL

Channels	1	2	3	4	5	6	7	8	9	10	11	12
To Station Frequency												
300												
500												
700	410	355	265	295	325	265	450	410	280	325	600	1170
900	+200	+190	+125	+220	+150	+170	+200	+250	+200	+330	+540	+65
1000	0	0	0	0	0	0	0	0	0	0	0	0
1200	-170	-145	-90	-75	-90	-95	-160	-160	-90	-165	-140	-70
1400	-135	-100	+20	+75	+55	-30	-60	-110	0	+25	+300	+50
1600	-50	-25	+125	+165	+210	+55	+75	+45	+60	+205	+530	+135
1800	-80	0	+140	+135	+235	+35	+30	+30	+60	+190	+465	+220
2000	-80	-60	+175	+130	+80	-40	+30	-20	+50	+155	+360	+390
2200	-165	-165	+105	+90	+25	-60	-60	-75	+35	+65	+335	+600
2400	-165	-115	+110	+145	+90	-55	+75	-70	+10	+100	+450	+900
2600	-210	-110	+170	+140	+160	-30	-250	-75	+95	+140	+555	+1100
2800	REMARKS ARE RELATIVE TO THE DELAY AT 1000 CPS. THROUGH 1300 MICROSECONDS											
3000	INDICATES THAT THE DELAY IS 700 MICROSECONDS GREATER THAN AT 1000 CPS.											
3200	A - 475 MICROSECONDS INDICATES THAT THE DELAY IS 475 MICROSECONDS.											
3400	LESS THAN AT 1000 CPS.											

Sheet 1 of 2

2
 Significant
 7 Sept. 63
 1-9

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST PHASE I

I. ENVELOPE DELAY DISTORTION

Group No. High

ID/EPA.

ACTUAL

Channels	1	2	3	4	5	6	7	8	9	10	11	12
To Station Frequency												
300												
500												
700												
900	SS 3.5	3.0	2.6	2.6	2.7	2.6	2.6	2.6	2.7	2.8	3.2	3.7
	MR 100	25	45	10	50	50	15	10	65	16.5	5	7.5
1000	SS 3.5	3.0	2.6	2.6	2.7	2.6	2.6	2.8	2.7	2.8	3.2	3.8
	MR 0	0	0	0	0	0	0	0	0	0	0	0
1200	SS 3.3	2.7	2.4	2.3	2.5	2.3	2.2	2.6	2.6	2.8	3.1	3.7
	MR 60	100	160	80	75	150	145	30	30	40	50	45
1400	SS 3.2	2.7	2.7	2.3	2.7	2.3	2.4	2.6	2.6	2.8	3.1	3.7
	MR 50	150	40	160	100	170	90	150	60	55	75	75
1600	SS 3.2	2.7	2.7	2.6	2.7	2.5	2.6	2.7	2.7	2.8	3.1	3.8
	MR 100	55	10	100	90	135	85	80	100	85	145	125
1800	SS 3.2	2.8	2.5	2.6	2.7	2.5	2.6	2.7	2.7	2.8	3.1	3.8
	MR 25	100	100	0	55	140	30	100	125	150	135	175
2000	SS 3.1	2.7	2.6	2.4	2.7	2.4	2.5	2.7	2.7	2.8	3.1	4.0
	MR 60	80	80	80	0	110	65	15	70	130	70	50
2200	SS 3.1	2.7	2.6	2.4	2.6	2.4	2.5	2.6	2.7	2.8	3.1	4.0
	MR 30	25	130	40	35	85	40	65	13	80	45	120
2400	SS 3.0	2.8	2.5	2.4	2.6	2.4	2.5	2.7	2.7	2.8	3.1	4.2
	MR 100	80	130	65	140	155	20	65	50	75	75	80
2600	SS 3.0	2.8	2.5	2.4	2.6	2.4	2.5	2.7	2.7	2.8	3.2	4.4
	MR 15	110	120	135	150	170	35	75	140	150	110	110
2800	Note MR: THE ACTUAL READING IS READ ON THE METER IN MILLISEC. THIS A READING OF 4.5 IS EQUAL TO 45 MICROSECONDS.											
3000	SS: THE SWITCH SETTING ON THE DELAY MEASURING SET, THE WHOLE NUMBERS INDICATE A CHANGE IN MILLISEC. WHILE THE TENTHS INDICATE A CHANGE IN TENTHS OF A MILLISEC. THUS 1.3											
3200	CHANGE IS = 1300 MICROSECONDS.											
3400												

SS = SWITCH SETTING
MR = METER READING

Sheet 1 of 2

CHANNELS 5, 6 & 12 TERMINATES AT I.C.

17 Sept. 63 R. J. ... 1-10

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST PHASE I

I. ENVELOPE DELAY DISTORTION

10/GPA.

Group No. High

ACTUAL

Channels	1	2	3	4	5	6	7	8	9	10	11	12
To Station Frequency												
300												
500												
700	135	205	180	370	115	210	370	180	210	115	145	115
900	+160	+20	+45	+10	+50	+50	+15	+10	+10	+165	+5	-25
1000	0	0	0	0	0	0	0	0	0	0	0	0
1200	-140	-200	-40	-220	-125	-150	-265	-170	-70	-140	-50	-55
1400	-250	-150	+140	-140	+100	-130	-110	-50	-40	+55	-5	-25
1600	-200	-45	+10	+100	+90	+35	+65	-20	+100	+65	+45	+125
1800	-275	-100	0	0	+55	+40	+30	0	+125	+150	+35	+175
2000	-340	-220	+60	-120	0	-90	-35	-65	+70	+130	-30	+250
2200	-370	-275	+130	-160	-65	-115	-60	-135	+13	+80	-55	+350
2400	-400	-120	+30	-135	+40	-45	-80	-35	+50	+75	-25	+560
2600	-465	-90	+20	-65	+50	-30	-65	-25	+140	+150	+110	+510
2800												
3000	Readings are relative to: The delay at 1000 cps. Thus at											
3200	A +310 MICRASECONDS indicates that the delay is 310											
3400	MICRASECONDS GREATER THAN AT 1000 CPS. A -495 MICRASECOND											

indicates that the delay is 495 MICRASECONDS LESS THAN AT 1,000 CPS.

Sheet 4 of 2

FEDERAL ELECTRIC CORPORATION

BR11/92

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST PHASE I

I. ENVELOPE DELAY DISTORTION

Group No. H1 CH-9 LD-CH-7.
1D/GEH.

ACTUAL												
Channels	1	2	3	4	5	6	7	8	9	10	11	12
To Station Frequency												
300												
500												
700												
900	MA					.01			0			
	SS					.10			5.2			
1000	MA					0			0			
	SS					.07			4.6			
1200	MA					.05			.07			
	SS					.04			4.3			
1400	MA					.045			0			
	SS					.03			4.3			
1600	MA					.08			.02			
	SS					.04			4.3			
1800	MA					.075			.01			
	SS					.03			4.3			
2000	MA					.035			0			
	SS					.03			4.3			
2200	MA					.02			.015			
	SS					.03			4			
2400	MA					.06			.015			
	SS					.03			4			
2600	MA					.055			.015			
	SS					.05			4			
2800	Note: MA - The actual reading as read on the meter in milliseconds. This is reading of .045 is equal to 45 microseconds.											
3000	SS - The actual reading on the meter measuring set the whole numbers indicate delay in milliseconds while the tenths indicate											
3200	A change in 10th of a millisecond, this is change is 10											
3400	microseconds.											

Variable atten. used between mux output & TMS input to bring the level down from +7 to 0 DBM.

Sheet 1 of 2

7 Sept 63 J. J. B. 1-12

FEDERAL ELECTRIC CORPORATION

BR11/92

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST PHASE I

I. ENVELOPE DELAY DISTORTION

Group No. 11 CH-9 LD CH-71D/GEL

Channels	ACTUAL											
	1	2	3	4	5	6	7	8	9	10	11	12
To Station Frequency												
300												
500												
700							805		1185			
900							+ 310		+ 1100			
1000							0		0			
1200							- 350		- 430			
1400							- 445		- 500			
1600							- 380		- 480			
1800							- 445		- 470			
2000							- 435		- 500			
2200							- 420		- 785			
2400							- 460		- 785			
2600							- 255		- 785			
2800	Note: Readings are relative to the delay at 1000 cps: this is + 310											
3000	microseconds indicates that the delay is 310 microseconds greater											
3200	than at 1000 cps; it - 475 microseconds indicates that the delay											
3400	is 475 microseconds less than at 1000 cps											

Sheet 4 of 2

2

FEDERAL ELECTRIC CORPORATION

BR11/93

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION

	Expected	Actual
Output level of both oscillators	ref.	_____ volts
Levels of harmonics	ref.	_____ volts
		_____ volts
SEE ATTACHED DATA SHEETS FOR DATA		_____ volts
		_____ volts
		_____ volts
% Distortion (All Circuits)	max. 2%	<u>3.37</u> %

End to End OR MAX 5% loop back.

2. CIRCUIT MONITOR AND ALARM

_____ Initial

3. MASTER OSCILLATOR STABILITY (ID)

Frequency	Frequency Change of 1 part in 10 ⁶	
Frequency (after 30 days)	per month	_____ cps

63,999.75 cps

Oscillator measurement performed 1200 Z 8 Sept., 1963
Oscillator chassis production Serial # 8485874A01
H.P. Model 524 D calibrated to Rugby, England on 10MC at 1130Z
Transmission period 8 September, 1963
The above test to be repeated at 1200Z 7 October, 1963

DATE 8 Sept 63

TESTER _____

SUPERVISOR _____

QUALITY ASSURANCE B. B. B.GEEIA for file

1-14

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

III - GEL LOOP

L. HARMONIC DISTORTION

CHANNEL 7 GROUP LD

CHANNEL 9 GROUP Hi.

FUNDAMENTAL FREQUENCY

HARMONICS

<u>400</u> cps	<u>2050</u> MV	<u>400</u> cps	<u>1150</u> MV
<u>1000</u> cps	<u>1110</u> MV	<u>1000</u> cps	<u>1300</u> MV
<u>600</u> cps	<u>11.5</u> MV	<u>600</u> cps	<u>11</u> MV
<u>800</u> cps	<u>14</u> MV	<u>800</u> cps	<u>0</u> MV
<u>1100</u> cps	<u>19</u> MV	<u>1100</u> cps	<u>0</u> MV
<u>1800</u> cps	<u>85</u> MV	<u>1800</u> cps	<u>62</u> MV
<u>2400</u> cps	<u>21</u> MV	<u>2400</u> cps	<u>15</u> MV
<u>3000</u> cps	<u>17</u> MV	<u>3000</u> cps	<u>17</u> MV
<u>1600</u> cps	<u>8</u> MV	<u>1200</u> cps	<u>10</u> MV
<u> </u> cps	<u> </u> MV	<u>1400</u> cps	<u>10</u> MV
<u> </u> cps	<u> </u> MV	<u>1600</u> cps	<u>60</u> MV

DATE 7 Sept. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE B. B. B.

GEEIA A. R. Filant

% distortion
4.73%
4.05%

% distortion
5.23%
5.24%

Formula For % distortion, see page
11-E of Test Procedures, System Tests
10 April, 1963

same spec. was written for GEL/ID loop as GPH/ID loop.
this specification has been exceeded on GEL CHAN#9

HARMONIC DISTORTION

ID/GEL Channel #9

Output level of both Oscillators

1000N REF 1500 M Volts

400N REF 1350 M Volts

Level of Harmonics

300 to 3500 cps

Frequency 600 cps

Milli volts 30

800

12

1200

32

1400

15

1600

110

1800

80

2000

24

2400

52

2800

12

Formula found on page 11-8
BR II System Tests Procedures

% Distortion greater than 7

BR11/93

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION
FUNDAMENTAL FREQUENCY

Channel 1 Group 1/1

400 cps 1.500 MV

1000 cps 1200 MV

HARMONICS

600 cps 5 MV

1200 cps 13 MV

1400 cps 17 MV

1800 cps 10 MV

2400 cps 12 MV

3000 cps 20 MV

 cps MV

 cps MV

 cps MV

 cps MV

% distortion = 1.79%

DATE

7 Sept 63

TESTER

SUPERVISOR

QUALITY ASSURANCE

B. E. B. Co.
SR/Robert

GEIA

1-17

BR 11/93

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
SYSTEM TEST

1. HARMONIC DISTORTION
FUNDAMENTAL FREQUENCY

Channel 2 Group 11/1

400 cps 1050 MV
1000 cps 1200 MV

HARMONICS

525 cps 10 MV
900 cps 9 MV
1600
1800 cps 30 MV
1800 cps 10 MV
2400 cps 13 MV
3000 cps 11 MV
_____ cps _____ MV
_____ cps _____ MV
_____ cps _____ MV

% distortion = 2%

DATE

7 Sept. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE

BE Bess
SR Pichol

GEEIN

FEDERAL ELECTRIC CORPORATION

BRH/23

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION

FUNDAMENTAL FREQUENCY

Channel 3

Group 1/1

400 cps 1200 MV

1000 cps 1250 MV

HARMONICS

800 cps 10 MV

1600 cps 40 MV

1800 cps 9 MV

2400 cps 16 MV

3000 cps 19 MV

1200 cps 8 MV

 cps MV

 cps MV

 cps MV

 cps MV

% distortion = 1.44%

DATE

2 Sept. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE

GEEIA

B. E. Bess
W. R. F. Hart

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION
FUNDAMENTAL FREQUENCY

Channel 4 Group Hi

400 cps 1150 MV

1000 cps 1250 MV

Harmonics

600 cps 12.5 MV

800 cps 7 MV

1200 cps 12 MV

1400 cps 4.8 MV

1800 cps 15 MV

2000 cps 4 MV

2400 cps 14 MV

3000 cps 11 MV

 cps MV

 cps MV

% distortion = 3.25%

DATE 7 Sept. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE B. P. Boas

GEEIA

FEDERAL ELECTRIC CORPORATION

DIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION FUNDAMENTAL FREQUENCY

Channel 5

Group 1/1

<u>400</u> cps	<u>1400</u> MV	<u>1350</u>
<u>1000</u> cps	<u>1400</u> MV	<u>1300</u>

Harmonics

<u>600</u> cps	<u>8</u> MV	<u>7</u>
<u>900</u> cps	<u>6</u> MV	<u>7</u>
<u>1200</u> cps	<u>7</u> MV	<u>6</u>
<u>1500</u> cps	<u>6.5</u> MV	<u>35</u>
<u>1800</u> cps	<u>20</u> MV	<u>7</u>
<u>2000</u> cps	<u>16</u> MV	<u>18</u>
<u>2200</u> cps	<u>12</u> MV	<u>12</u>
<u>2400</u> cps	<u>25</u> MV	<u>20</u>
<u>2600</u> cps	<u>10</u> MV	<u>10</u>
<u>2800</u> cps	<u>10</u> MV	<u>10</u>
<u>3000</u> cps	<u>18</u> MV	<u>4</u>
<u>3300</u> cps	<u>10</u> MV	<u>0</u>

run # 1 % distortion 4.08%

run # 2 % distortion 2.67%

DATE 7 Sept. 63

TESTER _____

SUPERVISOR _____

QUALITY ASSURANCE B E Bass

GEE IN. W A Fubel

NOTE: These distortion tests were run twice
the 1st time with out-of-band signaling unit
disabled.
The 2nd time the signaling unit was operating
normally.

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION
FUNDAMENTAL FREQUENCY

Channel 6 Group H

600 cps 1250 MV

1000 cps 1300 MV

Harmonics

600 cps 7 MV

1600 cps 26 MV

1800 cps 8 MV

2400 cps 11 MV

3000 cps 6 MV

 cps MV

 cps MV

 cps MV

 cps MV

 cps MV

% distortion 1.74%

DATE 7 Sept. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE B. E. Beers

G.E.E.IA. Y R. F. F. F.

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION
FUNDAMENTAL FREQUENCY

Channel 6 Group H/C

1100 cps 1250 MV

1000 cps 1300 MV

Harmonics

1000 cps 7 MV

1600 cps 26 MV

1800 cps 8 MV

2400 cps 11 MV

3000 cps 10 MV

 cps MV

 cps MV

 cps MV

 cps MV

 cps MV

% distortion 1.74%

DATE 7 Sept 63

TESTER

SUPERVISOR

QUALITY ASSURANCE B. E. Beas

G.E.E.IA. Y R. F. Chait

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION
FUNDAMENTAL FREQUENCY

Channel 7 Group 111

2nd 1.35

400 cps 1550 1350 MV

1000 cps 1400 1350 MV

HARMONICS

900 cps 0 7 MV

1400 cps 9 7 MV

1600 cps 35 26 MV

1800 cps 22 15 MV

2400 cps 20 15 MV

3000 cps 8 6 MV

_____ cps _____ MV

_____ cps _____ MV

_____ cps _____ MV

_____ cps _____ MV

run # 1 % distortion = 2.27%

run # 2 % distortion = 1.93%

DATE

7 Sept. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE

B. E. Bess

GEEIA

SPR. 10/1/63

FEDERAL ELECTRIC CORPORATION

BIO RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION FUNDAMENTAL FREQUENCY

Channel 2 Group Hi

400 cps 11.50 MV

1000 cps 11.50 MV

Harmonics

900 cps 7 MV

1400 cps 8 MV

1600 cps 2.7 MV

1800 cps 8 MV

2400 cps 8 MV

3000 cps 5 MV

 cps MV

 cps MV

 cps MV

 cps MV

% Distortion 1.98%

DATE 7 Sept 63

TESTED

SUPERVISOR

QUALITY ASSURANCE B. E. Beys

GEEIA

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

I. HARMONIC DISTORTION

Channel 9 Group Hi

FUNDAMENTAL FREQUENCY

400 cps 1200 MV

1000 cps 1200 MV

HARMONICS

1200 cps 5 MV

1600 cps 26 MV

1500 cps 8 MV

2000 cps 5 MV

2400 cps 8 MV

3000 cps 4 MV

_____ cps _____ MV

_____ cps _____ MV

_____ cps _____ MV

_____ cps _____ MV

% distortion = 1.74%

DATE

7 Sept. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE

B E Bess

G E E T A

W R Pickett

1-25

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

L HARMONIC DISTORTION

Channel 10 Group 1/1

FUNDAMENTAL FREQUENCY

400 cps 1350 MV

1000 cps 1350 MV

HARMONICS

1200 cps 5 MV

1400 cps 7 MV

1600 cps 8.5 MV

1800 cps 12 MV

2000 cps 4 MV

2400 cps 10 MV

3000 cps 15 MV

3200 cps 5 MV

 cps MV

 cps MV

% distortion = 2.06%

DATE

2 Sept. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE

RGH

GEEIA

NR

1-26

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

I. HARMONIC DISTORTION

Channel 11 Group H1

FUNDAMENTAL FREQUENCY

400 cps 1350 MV

1000 cps 1300 MV

HARMONICS

1200 cps 7 MV

1400 cps 6 MV

1600 cps 36 MV

1800 cps 18 MV

2400 cps 18 MV

3000 cps 12 MV

 cps MV

 cps MV

 cps MV

 cps MV

% distortion = 2.48%

DATE 2 Sept. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE BE Bros

GEEIA SR Plant

FEDERAL ELECTRIC CORPORATION

DIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION

Channel 12 Group Hi

FUNDAMENTAL FREQUENCY

400 cps 1600 MV

1000 cps 1350 MV

HARMONICS

1200 cps 7 MV

1400 cps 12 MV

1600 cps 38 MV

1800 cps 16 MV

2000 cps 6 MV

2400 cps 15 MV

3000 cps 6 MV

 cps MV

 cps MV

 cps MV

% distortion = 2.07%

DATE

7 Sept. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE

B. E. Bess

GEEIA -

J. R. Filant

FEDERAL ELECTRIC CORPORATION

DIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION

Channel 1 Group LD

FUNDAMENTAL FREQUENCY

400 cps 1150 mV

1000 cps 1300 mV

HARMONICS

600 cps 5 mV

1200 cps 9 mV

1400 cps 12 mV

1600 cps 36 mV

1800 cps 30 mV

2000 cps 12 mV

2400 cps 39 mV

3000 cps 9 mV

3200 cps 6 mV

 cps mV

% distortion = 3.73%

DATE

7 Sept. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE

B. E. Bass

G. E. E. I. A.

J. R. F. Schmitt

QUESTIONS

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION

Channel 3 Group LD

FUNDAMENTAL FREQUENCY

400 cps 1450 mV

1000 cps 1300 mV

HARMONICS

600 cps 5 mV

1200 cps 5 mV

1400 cps 13 mV

1600 cps 40 mV

1800 cps 9 mV

2000 cps 6 mV

2400 cps 47 mV

3000 cps 7 mV

 cps mV

 cps mV

% distortion = 3.22%

DATE

7 Sept. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE

GEEIA.

B. E. Ross
J. R. Schmitt

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION

Channel 4 Group 10

FUNDAMENTAL FREQUENCY

400 cps 1550 MV
1000 cps 1350 MV

HARMONICS

600 cps 25 MV
1200 cps 7 MV
1400 cps 12 MV
1600 cps 36 MV
1800 cps 36 MV
2000 cps 5 MV
2400 cps 15 MV
3000 cps 15 MV
 cps MV
 cps MV

% distortion = 2.9%

DATE

7 Sept. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE

B. E. Berry
G. E. C. J. A. S. R. F. S. A. T.

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION

Channel 5 CGroup 1.0

FUNDAMENTAL FREQUENCY

400 cps 1200 MV

1000 cps 1300 MV

HARMONICS

600 cps 10 MV

1200 CPS (18-25) 17 MV

1400 CPS 14 MV

1600 CPS 50 MV

1800 CPS 26 MV

2000 CPS 5 MV

2400 CPS 33 MV

3000 CPS 12 MV

3200 CPS 5 MV

 CPS MV

% distortion 4.2 %

DATE

7 Sept. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE

B. E. Boos

GEEIA.

J. R. Schmitt

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION

Channel 6 Group 1.0

FUNDAMENTAL FREQUENCY

400 cps 1400 MV

1000 cps 1300 MV

HARMONICS

600 cps 11 MV

1200 CPS 11 MV

1400 CPS 10 MV

1600 CPS 40 MV

1800 CPS 21 MV

2000 CPS 6 MV

2400 CPS 20 MV

3000 CPS 9 MV

 CPS MV

 CPS MV

% distortion 2.82%

DATE

7 Sept. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE

B.E. Ross

GEETA.

2 R. J. Hunt

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION

Channel 7 Group LD

FUNDAMENTAL FREQUENCY

400 cps 15512 MV

1000 cps 1100 MV

HARMONICS

600 cps 11 MV

1200 cps 10 MV

1400 cps 66666 7 MV

1600 cps 32 MV

1800 cps 55 MV

2000 cps 7 MV

2400 cps 35 MV

3000 cps 14 MV

 cps MV

 cps MV

% distortion 3.7 %

DATE 7 Sept. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE B. E. Boop

GEEIA SR [Signature]

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION

Channel 6 Group 10

FUNDAMENTAL FREQUENCY

400 cps 1200 MV

1000 cps 1300 MV

HARMONICS

600 cps 10 MV

1200 cps 0 MV

1400 cps 668659 MV

1600 cps 32 MV

1800 cps .56 MV

2000 cps 5 MV

2400 cps 33 MV

3000 cps 12 MV

 cps MV

 cps MV

% distortion - 4.35 %

DATE

7 Sept. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE

B. E. Bessy

6-6-7A.

AZ R. J. Hunt

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION

FUNDAMENTAL FREQUENCY

Channel 9 Group 1.0.

HARMONICS

<u>400</u> cps	<u>1350</u> MV
<u>1000</u> cps	<u>1335</u> MV
<u>600</u> cps	<u>17</u> MV
<u>1200</u> cps	<u>13</u> MV
<u>1400</u> cps	<u>12</u> MV
<u>1600</u> cps	<u>54</u> MV
<u>1800</u> cps	<u>26</u> MV
<u>2000</u> cps	<u>6</u> MV
<u>2400</u> cps	<u>22</u> MV
<u>3000</u> cps	<u>10</u> MV
<u>3200</u> cps	<u>25</u> MV
<u> </u> cps	<u> </u> MV

% distortion. 3.98 %

DATE

7 Sept. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE

GEEIA.

B. E. Reed
L. R. Felt

FEDERAL ELECTRIC CORPORATION

BIG ROLLY II PROJECT

DATA SHEET

SYSTEM TEST

2. HARMONIC DISTORTION

Channel 10

Group 1.0

1st Time 2nd

FUNDAMENTAL FREQUENCY

400 cps 1400 MV
1000 cps 1125 MV

HARMONICS

600 cps 22 MV 24
800 cps 25 MV 30
1200 cps 40 MV 42
1400 cps 11 MV 15
1600 cps 76 MV 66
1800 cps 80 MV 74
2000 cps 12 MV 14
2200 cps 18 MV 20
2400 cps 17 MV 44
2600 cps 12 MV 12
3000 cps 42 MV 23
3200 cps 17 MV 15

% distortion. 1st 2nd
7.7% 6.94%

DATE

7 SEPT. 63

TESTER

SUPERVISOR

QUALITY ASSURANCE

GEEIA.

NOTE: 2 tests were run on this channel,
Both times it exceeded specifications
I.E. MAX 5%

HARMONIC DISTORTION

ID/GPA Channel #10 Low

Output level of both Oscillators

1000N REF 1125 Volts

400N REF 1200 Volts

Level of Harmonics

1 Frequency <u>1200</u>	Milli Volts <u>14</u>
<u>1400</u>	<u>8</u>
<u>1600</u>	<u>40</u>
<u>1800</u>	<u>21</u>
<u>2000</u>	<u>17</u>
<u>2400</u>	<u>25</u>
<u>3000</u>	<u>10</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

% Distortion less than 5%

Level R Plot

FEDERAL ELECTRIC CORPORATION

BIG BALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION

Channel 11 Group 1.2

FUNDAMENTAL FREQUENCY

_____ cps _____ MV

_____ cps _____ MV

HARMONICS

_____ cps _____ MV

_____ cps _____ MV

_____ cps 60.00 _____ MV

_____ cps _____ MV

_____ cps _____ MV

_____ cps _____ MV

_____ cps _____ MV

_____ cps _____ MV

_____ cps _____ MV

_____ cps _____ MV

DATE _____

TESTER _____

SUPERVISOR _____

QUALITY ASSURANCE _____

A.R. Pickett

NOTE: Test not performed. This channel sent to a test filter unit at I.D.

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

SYSTEM TEST

1. HARMONIC DISTORTION
FUNDAMENTAL FREQUENCY

Channel 12 Group 1.0

400 cps 1400 MV

1000 cps 1200 MV

Harmonics

600 cps 18 MV

800 cps 27 MV

1200 cps 25 MV

1400 cps 36 MV

1600 cps 105 MV

1800 cps 100 MV

2000 cps 22 MV

2200 cps 18 MV

2400 cps 100 MV

2800 cps 13 MV

3000 34

% distortion 10+%

DATE 7 Sept. 63

TESTER _____

SUPERVISOR _____

QUALITY ASSURANCE B.E. Bass.

GEEIA. A.R. Schut

NOTE: This channel EXCEEDED TEST
SPECIFICATIONS

HARMONIC DISTORTION

ID/GPA Channel #12 Low

Output level of both Oscillators

1000N REF 1200 Volts

400N REF 1300 Volts

Level of Harmonics

1 Frequency	600	Milli Volts	10
	<u>800</u>		<u>13</u>
	<u>1200</u>		<u>14</u>
	<u>1400</u>		<u>14</u>
	<u>1600</u>		<u>48</u>
	<u>1800</u>		<u>20</u>
	<u>2000</u>		<u>14</u>
	<u>2400</u>		<u>28</u>
	<u>3000</u>		<u>10</u>
	<u> </u>		<u> </u>
	<u> </u>		<u> </u>

% Distortion less than 5%

David R. Pelant

FEDERAL ELECTRIC CORPORATION
BIG RALLY 11 PROJECT
DATA SHEET
SYSTEM TEST DATA

IDLE CHANNEL NOISE
ID/GPA

FIA, DBM uncorrected

HIGH GROUP

ID terminate
GPA measure

GPA terminate
ID measure

ID measure
looped at GPA

FIA weighted, DBAO

ID terminated
GPA measure

GPA terminate
ID measure

ID measure
looped at GPA

	1	2	3	4	5	6	7	8	9	10	11	12
ID terminate GPA measure	53	53	54	54	53	53	54.5	54	53	56	55.5	54.5
GPA terminate ID measure	47.5	48	49.5	49.5	50	50	49.5	50	51	51	47.5	47.5
ID measure looped at GPA	45	47	47.5	48	46.5	46.5	47.5	47.5	49	49	45.5	45
<u>FIA weighted, DBAO</u> ID terminated GPA measure	25	25	24	24	25	25	23.5	24	25	22	22.5	23.5
GPA terminate ID measure	30.5	30	28.5	28.5	28	28	28.5	28	27	27	30.5	30.5
ID measure looped at GPA	33	31	30.5	30	31.5	29.5	30.5	30.5	29	29	32.5	33

LOW GROUP

FIA, DBM uncorrected

ID terminate
GPA measure

GPA terminate
ID measure

ID measure
looped at GPA

FIA weighted DBAO

ID terminate
GPA measure

GPA terminate
ID measure

ID measure
looped at GPA

	1	2	3	4	5	6	7	8	9	10	11	12
ID terminate GPA measure	48.5	48.5	47.5	47.5			44	46.5	45.5	45.5		
GPA terminate ID measure	53	52	53	52.5			46	46.5	49.5	51	I.D.	
ID measure looped at GPA	48	47	45	45.5	TEAM AT I.C.	TEAM AT I.C.	42.5	43.5	44	43.5	Bad FILTER AT I.C.	TEAM AT I.C.
<u>FIA weighted DBAO</u> ID terminate GPA measure	25	26	25	25.5			32	31.5	28.5	27		
GPA terminate ID measure	29.5	29.5	30.5	30.5			34	31.5	32.5	32.5		
ID measure looped at GPA	30	31	33	32.5			35.5	34.5	34	34.5		

TEST Equipment:
GPA, Daven 12B +7 DBMO FIA weighted
ID " " " " " "

as a point
13/13/70
8 Sept 63 1-43

FEDERAL ELECTRIC CORPORATION
BIG RALLY 11 PROJECT
DATA SHEET

SYSTEM TEST DATA
IDLE CHANNEL NOISE
ID/GEL

FIA, DBM uncorrected

LOW GROUP
CHANNEL 7

HIGH GROUP
CHANNEL 9

ID terminate
GEL measure

- 56

- 57.5

GEL terminate
ID measure

- 46

- 48.5

ID measure
looped at GEL

- 42

- 43.5

ID looped
measure at GEL

- 51

- 56

FIA weighted, DBOA

ID terminate
GEL measure

- 33.0

- 31.5

GEL measure
ID looped

- 38.0

- 33.0

ID measure
looped at GEL

- 36.0

- 34.5

GEL terminate
ID measure

- 32.0

- 29.5

*Test equipment ID/GEL Daven 12 B

NOTE: Readings taken at 4W +7.0 DBM point at ID

Ex. reading -46.0 DBM
Correct factor + 7.0 DBM
-53.0 DBM

DBAO conversion 85 DBOA
Corrected reading 32.0 DBAO

NOTE: Readings taken at 4W -4.0 DBM point at GEL

Ex. reading -46.0 DBM
Correct factor - 4.0 DBM
-42.0 DBM

DBAO conversion 85 DBOA
Corrected reading 42 DBAO
3

DATE 17 Sept. 63

TESTER _____

SUPERVISOR _____

QUALITY ASSURANCE 238 J. B. ...

GEEIA R. ...

FEDERAL ELECTRIC CORPORATION
BIG RALLY LL PROJECT
DATA SHEET
SYSTEM TEST DATA
TALK THROUGH TEST

Talk through ID/GEL:

Channel # 7 Lo Group

GOOD

Channel # 9 Hi Group

GOOD

Talk through ID/GPA:

HIGH GROUP

Channel # 1 Good

Channel # 2 Good

Channel #3 Good

Channel #4 Good

Channel #5 Good

Channel #6 Good

Channel #7 Good

Channel #8 Good

Channel #9 Good

Channel #10 Good

Channel #11 Good

Channel #12 Good

LOW GROUP

Channel #1 Good

Channel #2 Good

Channel #3 Good

Channel #4 Good

Channel #5 Good

Channel #6 Good

Channel #7 Good

Channel #8 Good

Channel #9 Good

Channel #10 Good

Channel #11 BAD FILTER ID

Channel #12 Good

REMARKS: CHANNEL 11 Lo Group has bad filter

DATE 8 SEPT. 63

TESTER _____

SUPERVISOR _____

QUALITY ASSURANCE B. E. Bess

GEEIA A. Filant

CHART RECORDINGS

1. LOOPED CHANNEL NOISE:

Using 3A NMS, and Daven 12B as measuring device
Writing speed 3"/sec.
Chart speed 100 div/hr.
Channel #1 high group
Total recorded time - 168 hrs.
1st 6 minutes of each hour the loop shall be broken
and the channel terminated in 600 Ω at GPA providing
6 minutes of one-way recordings.

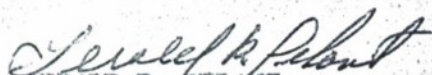
2. LOOPED TEST TONE:

Writing speed 3"/sec.
Chart speed 100 div/sec. hr
Channel 3 high group for 72 hours balance of test
on channel 4 low group.
Total recorded time - 182 hrs.

3. ONE WAY CHANNEL NOISE GPA:

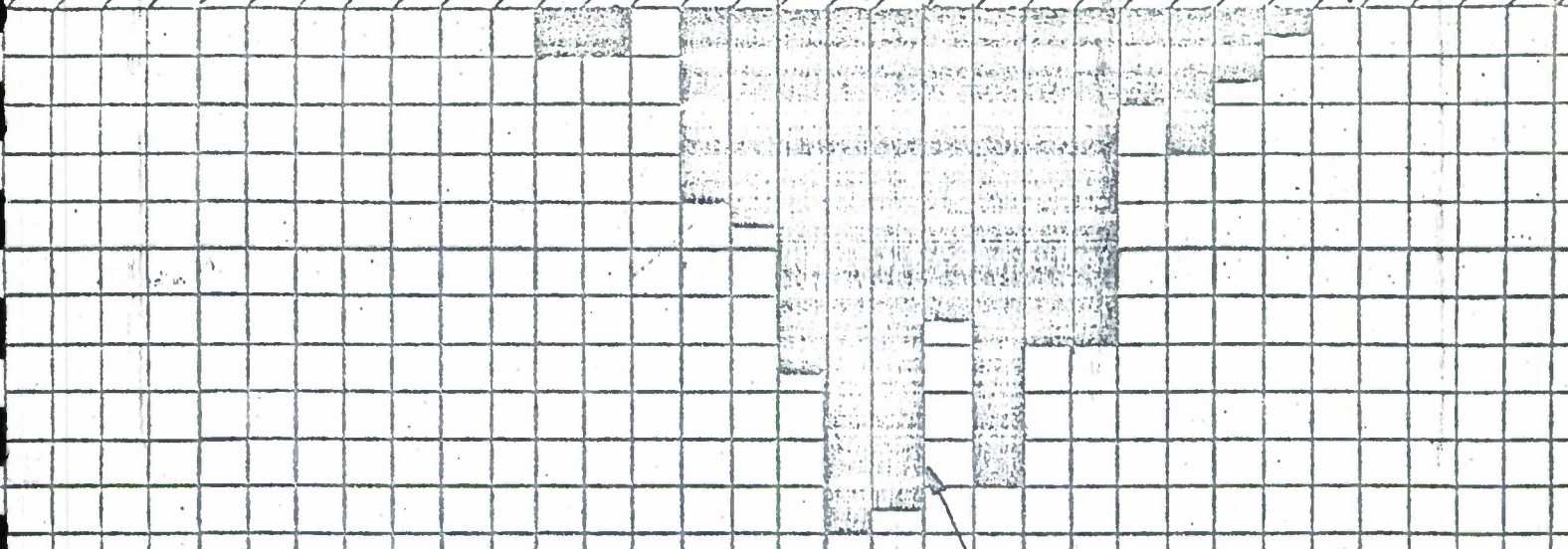
Using Daven 12B as measuring device
Writing speed 10"/sec.
Chart speed 100 div/hr.
Channel #7 at ID terminated in 600 Ω at
GPA (Low group)
Total recorded time - 182 hours.

Above are the recording tests and criteria.


GERALD R. PELANT
Hq Eur GEEIA Region

Atchs

28.0 28.5 29.0 29.5 30.0 30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 40.0 40.5 41.0 41.5 42.0 42.5 43.0 43.5



MEDIAN FOR TEST

37.0 DERN

6.0

31.0 DEA

BR II

NOISE TESTS

CHANNEL NOISE

CORRECTED FOR ZERO
dbm LEVEL

"C" MESSAGE

WEIGHING dbm.

DATE SEPT. 17, 1963ROLL NO 12345678CHANNEL 1 HIGH GROUPTOTAL SAMPLES 155THIS SHEET 155

MEDIAN OF THIS

TEST 37 DBRN-53 dbm

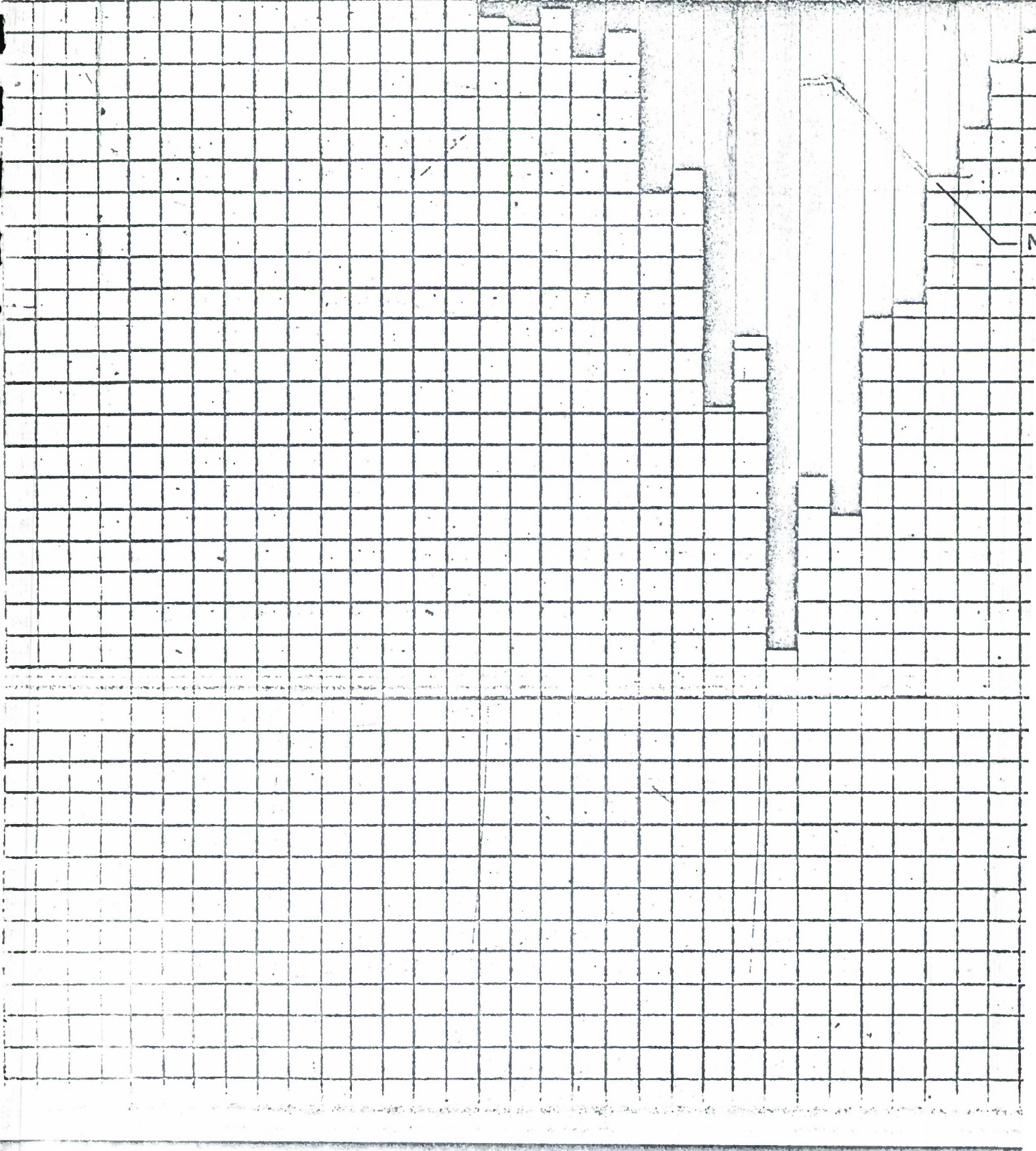
THIS RUN BEGAN

ON 1325 Z 9 SEPT.ENDED 1400 Z 17 SEPT.

I. DIV. = 2 SAMPLES

GPA → ID

28.0 28.5 29.0 29.5 30.0 30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 40.0 40.5 41.0 41.5 42.0 42.5 43.0 43.5



BR II

NOISE TESTS

CHANNEL NOISE

CORRECTED FOR ZERO
dbm LEVEL

"C" MESSAGE

WEIGHING dbm

DATE SEPT. 17, 1963ROLL NO 12345678CHANNEL 1 HIGH GROUP
LOOP BACKTOTAL SAMPLES 494THIS SHEET 494

MEDIAN OF THIS

TEST 40.5 DBRN49.5 dbm

THIS TEST BEGAN

ON 1325 Z 9 SEPTENDED 1400 Z 17 SEPT

ID — GPA — ID

1 DIVISION = 4 SAMPLES

MEDIAN OF TEST

40.5 DBRN-6.034.5 DBA

NET LOSS VARIATION

Assigned to
be 10-GPA
17 September 1963

HI Group - Channel 3

Variation in db	0	± 0.5	± 1.0	± 1.5	± 2.0
Number of samples					
Run #1	27	60	46	15	1
Run #2	45	55	57	9	1
Run #3	22	30	31	14	6
Run #4	28	41	46	17	12
Total	122	186	180	55	20

% time \leq 0 db variation - 21.3%
% time \leq ± 0.5 db variation - 55.3%
% time \leq ± 1.0 db variation - 87.3%
% time \leq ± 1.5 db variation - 97 %
% time \leq ± 2.0 db variation - 100 %

Low Group - Channel 4

Variation in db	0	± 0.5	± 1.0	± 1.5	± 2.0
Number of samples					
Run #5	17	41	45	46	22
Run #6	8	28	66	0	2
Run #7	21	38	37	29	19
Run #8	18	55	61	4	0
Total	64	162	209	79	43

% time \leq 0 db variation - 11.5%
% time \leq ± 0.5 db variation - 40.7%
% time \leq ± 1.0 db variation - 80 %
% time \leq ± 1.5 db variation - 93 %
% time \leq ± 2.0 db variation - 100 %

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

STATION I.D.Transmission Path: From I.D. Station to I.C. StationMC-50 Multiplex Rack No. 1E2

		EXPECTED	Hi-Group	ACTUAL	Lo Group
1.	MASTER OSCILLATOR LEVELS				
	TP1	(1.0v±0.1v)	<u>1.1</u>	<u> </u> v	N/A
	TP3	(1.0v±0.1v)	<u>4.8</u>	<u> </u> mv	N/A
2.	SLAVE OSCILLATOR SYNCHRONIZATION AND OUTPUT LEVELS				
	Scope Pattern	(locked)		<u>N/A</u> Int	
	TP1	(1.0v ±0.1v)		<u>N/A</u> v	
3.	HARMONIC GENERATOR LEVELS	(15v pp min)	<u>26</u>	<u> </u> v	
4.	CHANNEL CARRIER SUPPLY				
	Channel 1	64 kc (1.1v min)	<u>1.2</u>	<u> </u> v	
	Channel 2	68 kc (1.1v min)	<u>1.3</u>	<u> </u> v	
	Channel 3	72 kc (1.1v min)	<u>1.2</u>	<u> </u> v	
	Channel 4	76 kc (1.1v min)	<u>1.3</u>	<u> </u> v	
	Channel 5	80 kc (1.1v min)	<u>1.4</u>	<u> </u> v	
	Channel 6	84 kc (1.1v min)	<u>1.35</u>	<u> </u> v	
	Channel 7	88 kc (1.1v min)	<u>1.2</u>	<u> </u> v	
	Channel 8	92 kc (1.1v min)	<u>1.2</u>	<u> </u> v	
	Channel 9	96 kc (1.1v min)	<u>1.2</u>	<u> </u> v	
	Channel 10	100 kc (1.1v min)	<u>1.28</u>	<u> </u> v	
	Channel 11	104 kc (1.1v min)	<u>1.1</u>	<u> </u> v	
	Channel 12	108 kc (1.1v min)	<u>1.2</u>	<u> </u> v	
5.	GROUP CARRIER SUPPLY	(2v±0.2v)	<u>1.2</u>	<u> </u> v	
	CHANNEL CARRIER LEAK				
	Channel 1	64 kc (.13 mv max)	<u>.075</u>	<u> </u> mv	<u>.05</u>
	Channel 2	68 kc (.13 mv max)	<u>.035</u>	<u> </u> mv	<u>.04</u>
	Channel 3	72 kc (.13 mv max)	<u>.07</u>	<u> </u> mv	<u>.055</u>
	Channel 4	76 kc (.13 mv max)	<u>.07</u>	<u> </u> mv	<u>.04</u>
	Channel 5	80 kc (.13 mv max)	<u>.01</u>	<u> </u> mv	<u>.12</u>
	Channel 6	84 kc (.13 mv max)	<u>.08</u>	<u> </u> mv	<u>.105</u>
	Channel 7	88 kc (.13 mv max)	<u>.115</u>	<u> </u> mv	<u>.07</u>
	Channel 8	92 kc (.13 mv max)	<u>.065</u>	<u> </u> mv	<u>.07</u>
	Channel 9	96 kc (.13 mv max)	<u>.106</u>	<u> </u> mv	<u>.13</u>
	Channel 10	100 kc (.13 mv max)	<u>.095</u>	<u> </u> mv	<u>.02</u>
	Channel 11	104 kc (.13 mv max)	<u>.085</u>	<u> </u> mv	<u>.055</u>
	Channel 12	108 kc (.13 mv max)	<u>.075</u>	<u> </u> mv	<u>.103</u>

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

STATION D.Transmission Path: From Station D. to Station I.C.Multiplex Rack No. 1-2

		Hi Group		Lo Group	
		EXPECTED	ACTUAL		
7.	GROUP CARRIER LEAK	(1mv max)	N/A	_____ mv	.9
8.	SIGNALLING SUPPLY LEVEL	(2v. $\pm 0.2v$)	2V	_____ mv	N/A
9.	CHANNEL TRANSMIT LEVEL AT GROUP LEVEL (Input to Channel Modulator -1000 cps at -16 dbm)				
	Channel 1	63 kc	(7.8 mv ± 0.8 mv)	7.8	_____ mv 7.8
	Channel 2	67 kc	(7.8 mv ± 0.8 mv)	7.8	_____ mv 7.8
	Channel 3	71 kc	(7.8 mv ± 0.8 mv)	7.8	_____ mv 7.8
	Channel 4	75 kc	(7.8 mv ± 0.8 mv)	7.8	_____ mv 7.8
	Channel 5	79 kc	(7.8 mv ± 0.8 mv)	7.8	_____ mv 7.8
	Channel 6	83 kc	(7.8 mv ± 0.8 mv)	7.8	_____ mv 7.8
	Channel 7	87 kc	(7.8 mv ± 0.8 mv)	7.8	_____ mv 7.8
	Channel 8	91 kc	(7.8 mv ± 0.8 mv)	7.8	_____ mv 7.8
	Channel 9	95 kc	(7.8 mv ± 0.8 mv)	7.8	_____ mv 7.8
	Channel 10	99 kc	(7.8 mv ± 0.8 mv)	7.8	_____ mv 7.8
	Channel 11	103 kc	(7.8 mv ± 0.8 mv)	7.8	_____ mv 7.8
	Channel 12	107 kc	(7.8 mv ± 0.8 mv)	7.8	_____ mv 7.8

10. SIGNALLING LEVEL (AT GROUP INPUT) 3825 cps

Channel 1	60.175 kc	(.125 mv ± 0.02 mv)	.110	_____ mv	.123
Channel 2	64.175 kc	(.125 mv ± 0.02 mv)	.113	_____ mv	.115
Channel 3	68.175 kc	(.125 mv ± 0.02 mv)	.110	_____ mv	.127
Channel 4	72.175 kc	(.125 mv ± 0.02 mv)	.117	_____ mv	.108
Channel 5	76.175 kc	(.125 mv ± 0.02 mv)	.112	_____ mv	.130
Channel 6	80.175 kc	(.125 mv ± 0.02 mv)	.110	_____ mv	.115
Channel 7	84.175 kc	(.125 mv ± 0.02 mv)	.115	_____ mv	.118
Channel 8	88.175 kc	(.125 mv ± 0.02 mv)	.125	_____ mv	.108
Channel 9	92.175 kc	(.125 mv ± 0.02 mv)	.110	_____ mv	.132
Channel 10	96.175 kc	(.125 mv ± 0.02 mv)	.120	_____ mv	.120
Channel 11	100.175 kc	(.125 mv ± 0.02 mv)	.130	_____ mv	.120
Channel 12	104.175 kc	(.125 mv ± 0.02 mv)	.128	_____ mv	.130

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

STATION 1.D.Transmission Path: From Station 1.D. TO Station 1.C.Multiplex Rack No. 1 & 2

EXPECTED *Hi GROUP* ACTUAL *Lo GROUP*

11. GROUP TRANSMIT LEVEL

MRC-85, MRC-80 & FRC-39A(V) Stations	(13.7mv \pm 0.7 mv)	13.5	mv	13.7
MW503A LOS Stations	(4.9 mv \pm 0.2mv)			
MRC-85 & FRC-39A(V)	(27.4mv \pm 1.5 mv)	#1 27.4	N/A mv	#1 27.1
Modulator Input Level		#2 27.4		#2 27.
MRC-80 Transmitter Input Level	(-10 dbm \pm 0.5 dbm)		N/A dbm	
MW503A Transmitter Input Level	(7.7 mv \pm 0.3 mv)		N/A mv	

12. GROUP RECEIVE LEVEL

GRP IN (TP7)				
MRC-85, MRC-80 & FRC-39A(V)	(13.7mv \pm 0.8 mv)	13	mv	14.2
MW-503A LOS (except GPA)	(15.5 mv \pm 0.9 mv)		N/A mv	
MW-503A LOS (GPA only)	(7.7 mv \pm 0.5 mv)		N/A mv	
GRP OUT (TP4)	(18 mv \pm 1 mv)	18.8	mv	18.

13. CHANNEL RECEIVE LEVELS

VF REC Test Point

Channel 1	(-31 dbm \pm 1 dbm)	-31	dbm	-30.4
Channel 2	(-31 dbm \pm 1 dbm)	-31.3	dbm	-31.6
Channel 3	(-31 dbm \pm 1 dbm)	-31	dbm	-31.6
Channel 4	(-31 dbm \pm 1 dbm)	-31.7	dbm	-31.7
Channel 5	(-31 dbm \pm 1 dbm)	-31.6	dbm	-31.6
Channel 6	(-31 dbm \pm 1 dbm)	-31.2	dbm	-31.8
Channel 7	(-31 dbm \pm 1 dbm)	-31.2	dbm	-31.8
Channel 8	(-31 dbm \pm 1 dbm)	-31.6	dbm	-31.7
Channel 9	(-31 dbm \pm 1 dbm)	-31.2	dbm	-31.8
Channel 10	(-31 dbm \pm 1 dbm)	-31.2	dbm	-31.4
Channel 11	(-31 dbm \pm 1 dbm)	-30.7	dbm	-31.7
Channel 12	(-31 dbm \pm 1 dbm)	-31.3	dbm	-31.6

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

BRH/41

STATION I.D.

Transmission Path: From Station I.D. to Station I.C.

Multiplex Rack No. 1 & 2

EXPECTED

ACTUAL

13. CHANNEL RECEIVE LEVELS-continued

Hi-Group

Low Group

Channel VF Out

Channel 1	(+7 dbm \pm 0.5 db)	+7	dbm	+7
Channel 2	(+7 dbm \pm 0.5 db)	+7	dbm	+7
Channel 3	(+7 dbm \pm 0.5 db)	+7	dbm	+7
Channel 4	(+7 dbm \pm 0.5 db)	+7	dbm	+7
Channel 5	(+7 dbm \pm 0.5 db)	+7	dbm	+7
Channel 6	(+7 dbm \pm 0.5 db)	+7	dbm	+7
Channel 7	(+7 dbm \pm 0.5 db)	+7	dbm	+7
Channel 8	(+7 dbm \pm 0.5 db)	+7	dbm	+7
Channel 9	(+7 dbm \pm 0.5 db)	+7	dbm	+7
Channel 10	(+7 dbm \pm 0.5 db)	+7	dbm	+7
Channel 11	(+7 dbm \pm 0.5 db)	+7	dbm	+7
Channel 12	(+7 dbm \pm 0.5 db)	+7	dbm	+7

DATE

15 JUNE, 63.

TESTER

K. Wilson

SUPERVISOR

P. Gibbons

QUALITY ASSURANCE

B. E. Bess

Sheet 4 of 4

2-4

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

STATION 1CTransmission Path: From 1C Station to 1D Station 1CMC-50 Multiplex Rack No. 1

		EXPECTED	ACTUAL
1.	MASTER OSCILLATOR LEVELS	<u>N/A AT 1C</u>	
	TP1	(1.0v±0.1v)	<u> </u> v
	TP3	(1.0v±0.1v)	<u> </u> v
2.	SLAVE OSCILLATOR SYNCHRONIZATION AND OUTPUT LEVELS		
	Scope Pattern	(locked)	<u> </u> Int
	TP1	(1.0v ±0.1v)	<u>1</u> v
3.	HARMONIC GENERATOR LEVELS	(15v pp min)	<u>26</u> v
4.	CHANNEL CARRIER SUPPLY		
	Channel 1 64 kc	(1.1v min)	<u>1.2</u> v.
	Channel 2 68 kc	(1.1v min)	<u>1.2</u> v
	Channel 3 72 kc	(1.1v min)	<u>1.3</u> v
	Channel 4 76 kc	(1.1v min)	<u>1.2</u> v
	Channel 5 80 kc	(1.1v min)	<u>1.2</u> v
	Channel 6 84 kc	(1.1v min)	<u>1.1</u> v
	Channel 7 88 kc	(1.1v min)	<u>1.1</u> v
	Channel 8 92 kc	(1.1v min)	<u>1.3</u> v
	Channel 9 96 kc	(1.1v min)	<u>1.1</u> v
	Channel 10 100 kc	(1.1v min)	<u>1.2</u> v
	Channel 11 104 kc	(1.1v min)	<u>1.1</u> v
	Channel 12 108 kc	(1.1v min)	<u>1.3</u> v
5.	GROUP CARRIER SUPPLY	(2v±0.2v)	<u>2</u> v
6.	CHANNEL CARRIER LEAK		
	Channel 1 64 kc	(.13 mv max)	<u>.04</u> mv
	Channel 2 68 kc	(.13 mv max)	<u>.09</u> mv
	Channel 3 72 kc	(.13 mv max)	<u>.08</u> mv
	Channel 4 76 kc	(.13 mv max)	<u>.10</u> mv
	Channel 5 80 kc	(.13 mv max)	<u>.11</u> mv
	Channel 6 84 kc	(.13 mv max)	<u>.06</u> mv
	Channel 7 88 kc	(.13 mv max)	<u>.11</u> mv
	Channel 8 92 kc	(.13 mv max)	<u>.08</u> mv
	Channel 9 96 kc	(.13 mv max)	<u>.03</u> mv
	Channel 10 100 kc	(.13 mv max)	<u>.12</u> mv
	Channel 11 104 kc	(.13 mv max)	<u>.06</u> mv
	Channel 12 108 kc	(.13 mv max)	<u>.09</u> mv

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

STATION 1CTransmission Path: From Station 1C to Station 1DMultiplex Rack No. 1

		EXPECTED	ACTUAL
7.	GROUP CARRIER LEAK	(1mv max)	<u>1</u> mv
8.	SIGNALLING SUPPLY LEVEL	(2v. \pm 0.2v) <i>N/A ATIC</i>	<u> </u> mv
9.	CHANNEL TRANSMIT LEVEL AT GROUP LEVEL (Input to Channel Modulator -1000 cps at -16 dbm):		
	Channel 1 63 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 2 67 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 3 71 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 4 75 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 5 79 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 6 83 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 7 87 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 8 91 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 9 95 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 10 99 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 11 103 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 12 107 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv

10. SIGNALLING LEVEL (AT GROUP INPUT) 3825 cps *N/A ATIC*

Channel 1	60.175 kc	(.125 mv \pm 0.02 mv)	<u> </u> mv
Channel 2	64.175 kc	(.125 mv \pm 0.02 mv)	<u> </u> mv
Channel 3	68.175 kc	(.125 mv \pm 0.02 mv)	<u> </u> mv
Channel 4	72.175 kc	(.125 mv \pm 0.02 mv)	<u> </u> mv
Channel 5	76.175 kc	(.125 mv \pm 0.02 mv)	<u> </u> mv
Channel 6	80.175 kc	(.125 mv \pm 0.02 mv)	<u> </u> mv
Channel 7	84.175 kc	(.125 mv \pm 0.02 mv)	<u> </u> mv
Channel 8	88.175 kc	(.125 mv \pm 0.02 mv)	<u> </u> mv
Channel 9	92.175 kc	(.125 mv \pm 0.02 mv)	<u> </u> mv
Channel 10	96.175 kc	(.125 mv \pm 0.02 mv)	<u> </u> mv
Channel 11	100.175 kc	(.125 mv \pm 0.02 mv)	<u> </u> mv
Channel 12	104.175 kc	(.125 mv \pm 0.02 mv)	<u> </u> mv

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

STATION 1CTransmission Path: From Station 1C ~~1D~~ TO Station 1D ~~1E~~

Multiplex Rack No. _____

	EXPECTED	ACTUAL
II. GROUP TRANSMIT LEVEL		
MRC-85, MRC-80 & FRC-39A(V) Stations	(13.7mv \pm 0.7 mv)	<u>13.7</u> mv
MW503A LOS Stations	(4.9 mv \pm 0.2mv)	<u>N/A</u> mv
MRC-85 & FRC-39A(V) Modulator Input Level	(27.4mv \pm 1.5 mv)	- 20 dbm @ 75 OHMS
MRC-80 Transmitter Input Level	(-10 dbm \pm 0.5 dbm)	<u>N/A</u> dbm
MW503A Transmitter Input Level	(7.7 mv \pm 0.3 mv)	<u>N/A</u> mv
12. GROUP RECEIVE LEVEL		
GRP IN (TP7)		
MRC-85, MRC-80 & FRC-39A(V)	(13.7mv \pm 0.8 mv)	<u>13.5</u> mv
MW-503A LOS (except GPA)	(15.5 mv \pm 0.9 mv)	<u>N/A</u> mv
MW-503A LOS (GPA only)	(7.7 mv \pm 0.5 mv)	<u>N/A</u> mv
GRP OUT (TP4)	(18 mv \pm 1 mv)	<u>60</u> mv
13. CHANNEL RECEIVE LEVELS		
VF REC Test Point		
Channel 1	(-31 dbm \pm 1 dbm)	<u>31</u> dbm
Channel 2	(-31 dbm \pm 1 dbm)	<u>31</u> dbm
Channel 3	(-31 dbm \pm 1 dbm)	<u>31</u> dbm
Channel 4	(-31 dbm \pm 1 dbm)	<u>31</u> dbm
Channel 5	(-31 dbm \pm 1 dbm)	<u>31</u> dbm
Channel 6	(-31 dbm \pm 1 dbm)	<u>31</u> dbm
Channel 7	(-31 dbm \pm 1 dbm)	<u>31</u> dbm
Channel 8	(-31 dbm \pm 1 dbm)	<u>31</u> dbm
Channel 9	(-31 dbm \pm 1 dbm)	<u>31</u> dbm
Channel 10	(-31 dbm \pm 1 dbm)	<u>31</u> dbm
Channel 11	(-31 dbm \pm 1 dbm)	<u>31</u> dbm
Channel 12	(-31 dbm \pm 1 dbm)	<u>31</u> dbm

FEDERAL ELECTRIC CORPORATION
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DATA SHEET
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BRH/41

STATION 1C

Transmission Path: From Station 1C to Station 1D

Multiplex Rack No. 1

EXPECTED

ACTUAL

13. CHANNEL RECEIVE LEVELS-continued

Channel VF Out

Channel 1	(+7 dbm \pm 0.5 db)	<u>7</u> dbm
Channel 2	(+7 dbm \pm 0.5 db)	<u>7</u> dbm
Channel 3	(+7 dbm \pm 0.5 db)	<u>7</u> dbm
Channel 4	(+7 dbm \pm 0.5 db)	<u>7</u> dbm
Channel 5	(+7 dbm \pm 0.5 db)	<u>7</u> dbm
Channel 6	(+7 dbm \pm 0.5 db)	<u>7</u> dbm
Channel 7	(+7 dbm \pm 0.5 db)	<u>7</u> dbm
Channel 8	(+7 dbm \pm 0.5 db)	<u>7</u> dbm
Channel 9	(+7 dbm \pm 0.5 db)	<u>7</u> dbm
Channel 10	(+7 dbm \pm 0.5 db)	<u>7</u> dbm
Channel 11	(+7 dbm \pm 0.5 db)	<u>7</u> dbm
Channel 12	(+7 dbm \pm 0.5 db)	<u>7</u> dbm

DATE 17 JUNE 63

TESTER J. Decker

SUPERVISOR J. J. Lapardo

QUALITY ASSURANCE William R. Webb

GEEIA Robert D. Lytle

Sheet 4 of 4

FEDERAL ELECTRIC CORPORATION
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DATA SHEET
MC-50 MULTIPLEX TEST

STATION ICTransmission Path: From IC Station to GA StationMC-50 Multiplex Rack No. 2

		EXPECTED	ACTUAL
1.	MASTER OSCILLATOR LEVELS		
	TP1	(1.0v±0.1v)	<u>N/A</u> v
	TP3	(1.0v±0.1v)	<u>N/A</u> v
2.	SLAVE OSCILLATOR SYNCHRONIZATION AND OUTPUT LEVELS		
	Scope Pattern	(locked)	<u>N/A</u> Int
	TP1	(1.0v ±0.1v)	<u>N/A</u> v
3.	HARMONIC GENERATOR LEVELS	(15v pp min)	<u>N/A</u> v
4.	CHANNEL CARRIER SUPPLY		
	Channel 1 64 kc	(1.1v min)	<u>1.3</u> v.
	Channel 2 68 kc	(1.1v min)	<u>1.1</u> v
	Channel 3 72 kc	(1.1v min)	<u>1.15</u> v
	Channel 4 76 kc	(1.1v min)	<u>1.1</u> v
	Channel 5 80 kc	(1.1v min)	<u>1.3</u> v
	Channel 6 84 kc	(1.1v min)	<u>1.15</u> v
	Channel 7 88 kc	(1.1v min)	<u>1.1</u> v
	Channel 8 92 kc	(1.1v min)	<u>1.25</u> v
	Channel 9 96 kc	(1.1v min)	<u>1.2</u> v
	Channel 10 100 kc	(1.1v min)	<u>1.3</u> v
	Channel 11 104 kc	(1.1v min)	<u>1.2</u> v
	Channel 12 108 kc	(1.1v min)	<u>1.2</u> v
5.	GROUP CARRIER SUPPLY	(2v±0.2v)	<u>2</u> v
6.	CHANNEL CARRIER LEAK		
	Channel 1 64 kc	(.13 mv max)	<u>.12</u> mv
	Channel 2 68 kc	(.13 mv max)	<u>.03</u> mv
	Channel 3 72 kc	(.13 mv max)	<u>.11</u> mv
	Channel 4 76 kc	(.13 mv max)	<u>.07</u> mv
	Channel 5 80 kc	(.13 mv max)	<u>.11</u> mv
	Channel 6 84 kc	(.13 mv max)	<u>.05</u> mv
	Channel 7 88 kc	(.13 mv max)	<u>.04</u> mv
	Channel 8 92 kc	(.13 mv max)	<u>.06</u> mv
	Channel 9 96 kc	(.13 mv max)	<u>.09</u> mv
	Channel 10 100 kc	(.13 mv max)	<u>.09</u> mv
	Channel 11 104 kc	(.13 mv max)	<u>.125</u> mv
	Channel 12 108 kc	(.13 mv max)	<u>.05</u> mv

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

STATION ICTransmission Path: From Station IC to Station GAMultiplex Rack No. 2

		EXPECTED	ACTUAL
7.	GROUP CARRIER LEAK	(1mv max)	<u>.4</u> mv
8.	SIGNALLING SUPPLY LEVEL	(2v. $\pm 0.2v$)	<u>N/A</u> mv
9.	CHANNEL TRANSMIT LEVEL AT GROUP LEVEL (Input to Channel Modulator -1000 cps at -16 dbm)		
	Channel 1 63 kc	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 2 67 kc	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 3 71 kc	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 4 75 kc	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 5 79 kc	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 6 83 kc	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 7 87 kc	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 8 91 kc	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 9 95 kc	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 10 99 kc	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 11 103 kc	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 12 107 kc	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv

10. SIGNALLING LEVEL (AT GROUP INPUT) 3825 cps N/A at Site IC

Channel 1	60.175 kc	(.125 mv ± 0.02 mv)	<u> </u> mv
Channel 2	64.175 kc	(.125 mv ± 0.02 mv)	<u> </u> mv
Channel 3	68.175 kc	(.125 mv ± 0.02 mv)	<u> </u> mv
Channel 4	72.175 kc	(.125 mv ± 0.02 mv)	<u> </u> mv
Channel 5	76.175 kc	(.125 mv ± 0.02 mv)	<u> </u> mv
Channel 6	80.175 kc	(.125 mv ± 0.02 mv)	<u> </u> mv
Channel 7	84.175 kc	(.125 mv ± 0.02 mv)	<u> </u> mv
Channel 8	88.175 kc	(.125 mv ± 0.02 mv)	<u> </u> mv
Channel 9	92.175 kc	(.125 mv ± 0.02 mv)	<u> </u> mv
Channel 10	96.175 kc	(.125 mv ± 0.02 mv)	<u> </u> mv
Channel 11	100.175 kc	(.125 mv ± 0.02 mv)	<u> </u> mv
Channel 12	104.175 kc	(.125 mv ± 0.02 mv)	<u> </u> mv

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FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

STATION ICTransmission Path: From Station IC TO Station GA
GKMultiplex Rack No. 2

	EXPECTED	ACTUAL
II. GROUP TRANSMIT LEVEL		
MRC-85, MRC-80 & FRC-39A(V) Stations	Measured at GRP. OUT (13.7mv \pm 0.7 mv)	<u>13.7</u> mv
MW503A LOS Stations	(4.9 mv \pm 0.2mv)	<u>N/A</u> mv
MRC-85 & FRC-39A(V) Modulator Input Level	(27.4mv \pm 1.5 mv)	<u>N/A</u> mv
MRC-80 Transmitter Input Level	(-10 dbm \pm 0.5 dbm)	<u>N/A</u> dbm
MW503A Transmitter Input Level	(7.7 mv \pm 0.3 mv)	<u>N/A</u> mv
12. GROUP RECEIVE LEVEL		
GRP IN (TP7)	From EXC. # 2	
MRC-85, MRC-80 & FRC-39A(V)	(13.7mv \pm 0.8 mv)	<u>13.7</u> mv
MW-503A LOS (except GPA)	(15.5 mv \pm 0.9 mv)	<u>N/A</u> mv
MW-503A LOS (GPA only)	(7.7 mv \pm 0.5 mv)	<u>N/A</u> mv
GRP OUT (TP4)	(18 mv \pm 1 mv)	<u>60</u> mv
	60 mv @ 600 Ω = 18mv at 50 Ω	
13. CHANNEL RECEIVE LEVELS		
VF REC Test Point		
Channel 1	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm
Channel 2	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm
Channel 3	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm
Channel 4	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm
Channel 5	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm
Channel 6	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm
Channel 7	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm
Channel 8	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm
Channel 9	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm
Channel 10	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm
Channel 11	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm
Channel 12	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

BRH/41

STATION IC

Transmission Path: From Station IC to Station GA

Multiplex Rack No. 2

EXPECTED

ACTUAL

13. CHANNEL RECEIVE LEVELS-continued

Channel VF Out

Channel 1	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm
Channel 2	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm
Channel 3	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm
Channel 4	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm
Channel 5	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm
Channel 6	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm
Channel 7	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm
Channel 8	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm
Channel 9	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm
Channel 10	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm
Channel 11	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm
Channel 12	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm

DATE 25 June 63

TESTER J. E. Decker

SUPERVISOR F. A. Starnes

QUALITY ASSURANCE William R. Webb

GEEIA Robert A. Lyler

Sheet 4 of 4

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

STATION GPA

Transmission Path: From GPA Station to GA Station

MC-50 Multiplex Rack No. 3 & 4

		EXPECTED	ACTUAL
1.	MASTER OSCILLATOR LEVELS		
	TP1	(1.0v±0.1v)	<u>N/A</u> v
	TP3	(1.0v±0.1v)	<u>N/A</u> v
2.	SLAVE OSCILLATOR SYNCHRONIZATION AND OUTPUT LEVELS		
	Scope Pattern	(locked)	<u> </u> Int
	TP1	(1.0v ±0.1v)	<u>1.05</u> v
3.	HARMONIC GENERATOR LEVELS	(15v pp min)	<u>15</u> v
4.	CHANNEL CARRIER SUPPLY		
	Channel 1	64 kc 108 (1.1v min)	<u>1.15</u> v
	Channel 2	68 kc 104 (1.1v min)	<u>1.15</u> v
	Channel 3	72 kc 100 (1.1v min)	<u>1.15</u> v
	Channel 4	76 kc 96 (1.1v min)	<u>1.15</u> v
	Channel 5	80 kc 92 (1.1v min)	<u>1.15</u> v
	Channel 6	84 kc 88 (1.1v min)	<u>1.15</u> v
	Channel 7	88 kc 84 (1.1v min)	<u>1.15</u> v
	Channel 8	92 kc 80 (1.1v min)	<u>1.15</u> v
	Channel 9	96 kc 76 (1.1v min)	<u>1.15</u> v
	Channel 10	100 kc 72 (1.1v min)	<u>1.15</u> v
	Channel 11	104 kc 68 (1.1v min)	<u>1.15</u> v
	Channel 12	108 kc 64 (1.1v min)	<u>1.15</u> v
5.	GROUP CARRIER SUPPLY	(2v±0.2v)	<u>2.15</u> v
6.	CHANNEL CARRIER LEAK		

RACK #4 RACK #3

			Lo. Grp.	H. Grp.
Channel 1	64 kc 108	(.13 mv max)	<u>.115</u> mv	.11
Channel 2	68 kc 104	(.13 mv max)	<u>.02</u> mv	.11
Channel 3	72 kc 100	(.13 mv max)	<u>.07</u> mv	.11
Channel 4	76 kc 96	(.13 mv max)	<u>.13</u> mv	.09
Channel 5	80 kc 92	(.13 mv max)	<u>.09</u> mv	.05
Channel 6	84 kc 88	(.13 mv max)	<u>.085</u> mv	.03
Channel 7	88 kc 84	(.13 mv max)	<u>.13</u> mv	.11
Channel 8	92 kc 80	(.13 mv max)	<u>.125</u> mv	.11
Channel 9	96 kc 76	(.13 mv max)	<u>.13</u> mv	.07
Channel 10	100 kc 72	(.13 mv max)	<u>.09</u> mv	.15
Channel 11	104 kc 68	(.13 mv max)	<u>.025</u> mv	.04
Channel 12	108 kc 64	(.13 mv max)	<u>.06</u> mv	.08

FEDERAL ELECTRIC CORPORATION
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DATA SHEET
MC-50 MULTIPLEX TEST

STATION GPATransmission Path: From Station GPA to Station GAMultiplex Rack No. 3 & 4

			EXPECTED	ACTUAL	
7.	GROUP CARRIER LEAK		(1mv max)	<u>.64</u> mv	
8.	SIGNALLING SUPPLY LEVEL		(2v. $\pm 0.2v$)	<u>2</u> mv	
9.	CHANNEL TRANSMIT LEVEL AT GROUP LEVEL (Input to Channel Modulator -1000 cps at -16 dbm)				Low Grp Rack 4 H.Grp Rack 3
	Channel 1	63 kc 108	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv	7.8
	Channel 2	67 kc 104	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv	7.8
	Channel 3	71 kc 100	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv	7.8
	Channel 4	75 kc 96	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv	7.8
	Channel 5	79 kc 92	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv	7.8
	Channel 6	83 kc 88	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv	7.8
	Channel 7	87 kc 84	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv	7.8
	Channel 8	91 kc 80	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv	7.8
	Channel 9	95 kc 76	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv	7.8
	Channel 10	99 kc 72	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv	7.8
	Channel 11	103 kc 68	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv	7.8
	Channel 12	107 kc 64	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv	7.8
10.	SIGNALLING LEVEL (AT GROUP INPUT) 3825 cps				
	Channel 1	104-60.175 kc	(.125 mv ± 0.02 mv)	<u>.125</u> mv	.125
	Channel 2	100-64.175 kc	(.125 mv ± 0.02 mv)	<u>.125</u> mv	.125
	Channel 3	96-68.175 kc	(.125 mv ± 0.02 mv)	<u>.125</u> mv	.125
	Channel 4	92-72.175 kc	(.125 mv ± 0.02 mv)	<u>.125</u> mv	.125
	Channel 5	88-76.175 kc	(.125 mv ± 0.02 mv)	<u>.125</u> mv	.125
	Channel 6	84-80.175 kc	(.125 mv ± 0.02 mv)	<u>.125</u> mv	.125
	Channel 7	80-84.175 kc	(.125 mv ± 0.02 mv)	<u>.125</u> mv	.125
	Channel 8	76-88.175 kc	(.125 mv ± 0.02 mv)	<u>.125</u> mv	.125
	Channel 9	72-92.175 kc	(.125 mv ± 0.02 mv)	<u>.125</u> mv	.125
	Channel 10	68-96.175 kc	(.125 mv ± 0.02 mv)	<u>.125</u> mv	.125
	Channel 11	64-00.175 kc	(.125 mv ± 0.02 mv)	<u>.125</u> mv	.125
	Channel 12	60-04.175 kc	(.125 mv ± 0.02 mv)	<u>.125</u> mv	.125

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

STATION GPATransmission Path: From Station GPA TO Station GAMultiplex Rack No. 3 # 4

		EXPECTED	ACTUAL	
II.	GROUP TRANSMIT LEVEL		Rack #4	Rack 3
			Low Grp	H. Grp
	MRC-85, MRC-80 & FRC-39A(V)	(13.7mv \pm 0.7 mv)	<u>N/A</u> mv	<u>N/A</u>
	Stations		4.9	4.9
	MW503A LOS Stations	(4.9 mv \pm 0.2mv)	mv	
	MRC-85 & FRC-39A(V)	(27.4mv \pm 1.5 mv)	<u>N/A</u> mv	<u>N/A</u>
	Modulator Input Level			
	MRC-80 Transmitter Input Level	(-10 dbm \pm 0.5 dbm)	<u>N/A</u> dbm	<u>N/A</u>
	MW503A Transmitter Input Level	(7.7 mv \pm 0.3 mv)	<u>7.9</u> mv	<u>7.7</u>
12.	GROUP RECEIVE LEVEL			
	GRP IN (TP7)			
	MRC-85, MRC-80 & FRC-39A(V)	(13.7mv \pm 0.8 mv)	<u>N/A</u> mv	<u>N/A</u>
	MW-503A LOS (except GPA)	(15.5 mv \pm 0.9 mv)	<u>N/A</u> mv	<u>N/A</u>
	MW-503A LOS (GPA only)	(7.7 mv \pm 0.5 mv) 13.7 mv	<u>14.1</u> mv	<u>13.7</u>
		50		
	GRP OUT (TP4) 60mv(600)	(18 mv \pm 1 mv)	<u>60</u> mv	<u>60</u>
13.	CHANNEL RECEIVE LEVELS			
	VF REC Test Point			
	Channel 1	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm	<u>-31</u>
	Channel 2	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm	<u>-31</u>
	Channel 3	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm	<u>-31</u>
	Channel 4	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm	<u>-31</u>
	Channel 5	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm	<u>-31</u>
	Channel 6	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm	<u>-31</u>
	Channel 7	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm	<u>-31</u>
	Channel 8	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm	<u>-31</u>
	Channel 9	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm	<u>-31</u>
	Channel 10	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm	<u>-31</u>
	Channel 11	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm	<u>-31</u>
	Channel 12	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm	<u>-31</u>

FEDERAL ELECTRIC CORPORATION
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DATA SHEET
MC-50 MULTIPLEX TEST

BRH/41

STATION GPA

Transmission Path: From Station GPA to Station GA

Multiplex Rack No. 3 #4

EXPECTED

ACTUAL

13. CHANNEL RECEIVE LEVELS-continued

Channel VF Out

Low Grp
Rack #4

H. Grp.
Rack #3

Channel 1	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm	+7
Channel 2	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm	+7
Channel 3	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm	+7
Channel 4	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm	+7
Channel 5	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm	+7
Channel 6	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm	+7
Channel 7	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm	+7
Channel 8	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm	+7
Channel 9	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm	+7
Channel 10	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm	+7
Channel 11	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm	+7
Channel 12	(+7 dbm \pm 0.5 db)	<u>+7</u> dbm	+7

DATE 4 July 63

TESTER W. S. Gray

SUPERVISOR J. W. King

QUALITY ASSURANCE W. C. King

GEEIA Robert D. Taylor

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DATA SHEET
IDLE NOISE MEASUREMENT
MC-50 MULTIPLEX TEST

Addendum to BR II/41
Sheet 1 of 3

STATION: GPA

Transmission Path: From GPA Station to GA Station

HIGH GROUP

<u>Channel</u>	<u>Meter Reading</u>	<u>Odbmo Reading</u>	<u>dba</u>
1	-64.5	-71.5	13.5
2	-64.5	-71.5	13.5
3	-62	-69	16
4	-64	-71	14
5	-61	-68	17
6	-64	-71	14
7	-64	-71	14
8	-64	-71	14
9	-63.5	-70.5	14.5
10	-63.5	-70.5	14.5
11	-62	-69	16
12	-63	-70	15

LOW GROUP

<u>Channel</u>	<u>Meter Reading</u>	<u>Odbmo Reading</u>	<u>dba</u>
1	-58	-65	20
2	-59	-66	19
3	-59	-66	19
4	-60	-67	18
5	-60	-67	18
6	-60	-67	18
7	-59.5	-66.5	18.5
8	-59.5	-66.5	18.5
9	-60	-67	18
10	-59.5	-66.5	18.5
11	-59	-66	19
12	-58.5	-65.5	19.5

NOTE: The measurement was performed with multiplex looped back-to-back with radio isolation amplifier, equalizer network and baseband amplifiers in the loop-back circuit. The multiplex was aligned according to the T/A level values.

DATA SHEET
IDLE NOISE MEASUREMENT
MC-50 MULTIPLEX TEST

Addendum to BR II/41
Sheet 2 of 3

STATION: GPA

Transmission Path: From GPA Station to GA Station

Back-to-Back Connection

HIGH GROUP

<u>Channel</u>	<u>Meter Reading</u>	<u>Odbmo Reading</u>	<u>dba</u>
1	-65.5	-72.5	12.5
2	-65.5	-72.5	12.5
3	-66	-73	12
4	-66	-73	12
5	-64.5	-71.5	13.5
6	-65.5	-72.5	12.5
7	-65	-72	13
8	-65.5	-72.5	12.5
9	-63.5	-70.5	14.5
10	-65	-72	13
11	-65	-72	13
12	-65	-72	13

LOW GROUP

<u>Channel</u>	<u>Meter Reading</u>	<u>Odbmo Reading</u>	<u>dba</u>
1	-57	-64	21
2	-58	-65	20
3	-58	-65	20
4	-58.5	-65.5	19.5
5	-58.5	-65.5	19.5
6	-59	-66	19
7	-58	-65	20
8	-59	-66	19
9	-58.5	-65.5	19.5
10	-58.5	-65.5	19.5
11	-58	-65	20
12	-57.5	-64.5	20.5

DATA SHEET
IDLE NOISE MEASUREMENT
MC-50 MULTIPLEX TEST

Addendum to BR II/41
Sheet 3 of 3

STATION: GPA

Transmission Path: From GPA Station to GA Station

Back-to-Back Connection

HIGH GROUP

<u>Channel</u>	<u>Reading Without Tone</u>	<u>Reading with Inserted Tone</u>	
		<u>Upper Ch.</u>	<u>Lower Ch.</u>
1			
2			
3	-65.5	-64.5	-64.5
4	-65.5	-65.5	-65.5
5	-65.5	-65.5	-65.5
6	-65.5	-60	-65.5
7	-66	-66	-63
8	-66	-66	-66
9	-65.5	-65.5	-65.5
10	-64.5	-64.5	-64.5
11	-65	-64	-65
12	-65	-64.5	-65
		-	-65

LOW GROUP

<u>Channel</u>	<u>Reading Without Tone</u>	<u>Reading with Inserted Tone</u>	
		<u>Upper Ch.</u>	<u>Lower Ch.</u>
1	-57.5	-55	-
2	-58	-55.5	-55.5
3	-58.5	-55.5	-55.5
4	-58.5	-57	-56
5	-59	-57	-56.5
6	-59.5	-57.5	-57
7	-58.5	-49	-56.5
8	-59	-57	-56.5
9	-59	-56.5	-56.5
10	-59.5	-56	-56
11	-58.5	-55.5	-55
12	-58	-	-56.5

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

STATION GPA

Transmission Path: From GPA Station to GAB Station

MC-50 Multiplex Rack No. 1

		EXPECTED	ACTUAL
1.	MASTER OSCILLATOR LEVELS		
	TP1	(1.0v±0.1v)	<u>N/A</u> v
	TP3	(1.0v±0.1v)	<u>N/A</u> v
2.	SLAVE OSCILLATOR SYNCHRONIZATION AND OUTPUT LEVELS		
	* See GA Station Test Data Sheets		
	Scope Pattern	(locked)	* ↑ Int
	TP1	(1.0v ±0.1v)	↓ v
3.	HARMONIC GENERATOR LEVELS	(15v pp min)	↓ v
4.	CHANNEL CARRIER SUPPLY		* ↓
	* See Test Data GPA/GA Station Tests performed 4 July 1963		
	Channel 1 64 kc	(1.1v min)	* ↑ v.
	Channel 2 68 kc	(1.1v min)	↓ v
	Channel 3 72 kc	(1.1v min)	↓ v
	Channel 4 76 kc	(1.1v min)	↓ v
	Channel 5 80 kc	(1.1v min)	↓ v
	Channel 6 84 kc	(1.1v min)	↓ v
	Channel 7 88 kc	(1.1v min)	↓ v
	Channel 8 92 kc	(1.1v min)	↓ v
	Channel 9 96 kc	(1.1v min)	↓ v
	Channel 10 100 kc	(1.1v min)	↓ v
	Channel 11 104 kc	(1.1v min)	↓ v
	Channel 12 108 kc	(1.1v min)	↓ v
5.	GROUP CARRIER SUPPLY	(2v±0.2v)	↓ v
6.	CHANNEL CARRIER LEAK		* ↓
	Channel 1 64 kc	(.13 mv max)	<u>N/A</u> mv
	Channel 2 68 kc	(.13 mv max)	<u>N/A</u> mv
	Channel 3 72 kc	(.13 mv max)	<u>N/A</u> mv
	Channel 4 76 kc	(.13 mv max)	<u>N/A</u> mv
	Channel 5 92XX kc	(.13 mv max)	.05 mv
	Channel 6 88XX kc	(.13 mv max)	.11 mv
	Channel 7 84XX kc	(.13 mv max)	.03 mv
	Channel 8 80XX kc	(.13 mv max)	.11 mv
	Channel 9 96 kc	(.13 mv max)	<u>N/A</u> mv
	Channel 10 100 kc	(.13 mv max)	<u>N/A</u> mv
	Channel 11 104 kc	(.13 mv max)	<u>N/A</u> mv
	Channel 12 108 kc	(.13 mv max)	<u>N/A</u> mv

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

STATION GPATransmission Path: From Station GPA to Station GABMultiplex Rack No. 1

		EXPECTED	ACTUAL
7.	GROUP CARRIER LEAK	(1mv max)	<u>N/A</u> mv
8.	✓ SIGNALLING SUPPLY LEVEL	(2v. $\pm 0.2v$)	<u>N/A</u> mv
9.	✓ CHANNEL TRANSMIT LEVEL AT GROUP LEVEL (Input to Channel Modulator -1000 cps at -16 dbm)		
	Channel 1 63 kc	(7.8 mv ± 0.8 mv)	<u>N/A</u> mv
	Channel 2 67 kc	(7.8 mv ± 0.8 mv)	<u>N/A</u> mv
	Channel 3 71 kc	(7.8 mv ± 0.8 mv)	<u>N/A</u> mv
	Channel 4 75 kc	(7.8 mv ± 0.8 mv)	<u>N/A</u> mv
	Channel 5 91 20 kc	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 6 87 28 kc	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 7 83 27 kc	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 8 79 21 kc	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 9 95 kc	(7.8 mv ± 0.8 mv)	<u>N/A</u> mv
	Channel 10 99 kc	(7.8 mv ± 0.8 mv)	<u>N/A</u> mv
	Channel 11 103 kc	(7.8 mv ± 0.8 mv)	<u>N/A</u> mv
	Channel 12 107 kc	(7.8 mv ± 0.8 mv)	<u>N/A</u> mv

10. ✓ SIGNALLING LEVEL (AT GROUP INPUT) 3825 cps

Channel 1	60.175 kc	(.125 mv ± 0.02 mv)	<u>N/A</u> mv
Channel 2	64.175 kc	(.125 mv ± 0.02 mv)	<u>N/A</u> mv
Channel 3	68.175 kc	(.125 mv ± 0.02 mv)	<u>N/A</u> mv
Channel 4	72.175 kc	(.125 mv ± 0.02 mv)	<u>N/A</u> mv
Channel 5	88 XX 175 kc	(.125 mv ± 0.02 mv)	<u>.4</u> mv
Channel 6	84 XX 175 kc	(.125 mv ± 0.02 mv)	<u>.4</u> mv
Channel 7	80 XX 175 kc	(.125 mv ± 0.02 mv)	<u>.4</u> mv
Channel 8	76 XX 175 kc	(.125 mv ± 0.02 mv)	<u>.4</u> mv
Channel 9	92.175 kc	(.125 mv ± 0.02 mv)	<u>N/A</u> mv
Channel 10	96.175 kc	(.125 mv ± 0.02 mv)	<u>N/A</u> mv
Channel 11	100.175 kc	(.125 mv ± 0.02 mv)	<u>N/A</u> mv
Channel 12	104.175 kc	(.125 mv ± 0.02 mv)	<u>N/A</u> mv

* ↓

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* Has been changed to .4 mv. to conform with Motorola specifications.
per Mr. H. Detweiler. FEC.

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

STATION GPATransmission Path: From Station GPA TO Station GABMultiplex Rack No. 1

	EXPECTED	ACTUAL
II. GROUP TRANSMIT LEVEL		
MRC-85, MRC-80 & FRC-39A(V) Stations	(13.7mv \pm 0.7 mv)	<u>N/A</u> mv
MW503A LOS Stations	(4.9 mv \pm 0.2mv)	<u>4.9</u> mv
MRC-85 & FRC-39A(V) Modulator Input Level	(27.4mv \pm 1.5 mv)	<u>N/A</u> mv
MRC-80 Transmitter Input Level	(-10 dbm \pm 0.5 dbm)	<u>N/A</u> dbm
MW503A Transmitter Input Level	(7.7 mv \pm 0.3 mv) #A-7.7, #B-7.7	<u>B-7.7</u> mv
12. GROUP RECEIVE LEVEL		
GRP IN (TP7)		
MRC-85, MRC-80 & FRC-39A(V)	(13.7mv \pm 0.8 mv)	<u>N/A</u> mv
MW-503A LOS (except GPA) from GA	(15.5 mv \pm 0.9 mv)	<u>15.5</u> mv
MW-503A LOS (GPA only)	(7.7 mv \pm 0.5 mv)	<u>N/A</u> mv
GRP OUT (TP4)	(18 mv \pm 1 mv)	<u>18</u> mv
13. CHANNEL RECEIVE LEVELS		
VF REC Test Point		
Channel 1	(-31 dbm \pm 1 dbm)	<u>N/A</u> dbm
Channel 2	(-31 dbm \pm 1 dbm)	<u>N/A</u> dbm
Channel 3	(-31 dbm \pm 1 dbm)	<u>N/A</u> dbm
Channel 4	(-31 dbm \pm 1 dbm)	<u>N/A</u> dbm
Channel 5	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm
Channel 6	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm
Channel 7	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm
Channel 8	(-31 dbm \pm 1 dbm)	<u>-31</u> dbm
Channel 9	(-31 dbm \pm 1 dbm)	<u>N/A</u> dbm
Channel 10	(-31 dbm \pm 1 dbm)	<u>N/A</u> dbm
Channel 11	(-31 dbm \pm 1 dbm)	<u>N/A</u> dbm
Channel 12	(-31 dbm \pm 1 dbm)	<u>N/A</u> dbm

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

BRH/41

STATION GPA

Transmission Path: From Station GPA to Station GAB

Multiplex Rack No. 1

EXPECTED

ACTUAL

13. CHANNEL RECEIVE LEVELS-continued

Channel VF Out

Channel 1	(+7 dbm \pm 0.5 db)	<u>N/A</u> dbm
Channel 2	(+7 dbm \pm 0.5 db)	<u>N/A</u> dbm
Channel 3	(+7 dbm \pm 0.5 db)	<u>N/A</u> dbm
Channel 4	(+7 dbm \pm 0.5 db)	<u>N/A</u> dbm
Channel 5	(+7 dbm \pm 0.5 db)	<u>-7</u> dbm
Channel 6	(+7 dbm \pm 0.5 db)	<u>-7</u> dbm
Channel 7	(+7 dbm \pm 0.5 db)	<u>-7</u> dbm
Channel 8	(+7 dbm \pm 0.5 db)	<u>-7</u> dbm
Channel 9	(+7 dbm \pm 0.5 db)	<u>N/A</u> dbm
Channel 10	(+7 dbm \pm 0.5 db)	<u>N/A</u> dbm
Channel 11	(+7 dbm \pm 0.5 db)	<u>N/A</u> dbm
Channel 12	(+7 dbm \pm 0.5 db)	<u>N/A</u> dbm

DATE 15 JULY 63

TESTER W. S. Gray

SUPERVISOR J. W. Wingo

QUALITY ASSURANCE W. A. Crisp

GEEIA Y. L. L.

Sheet 4 of 4

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

Transmission Path: From GAB Station to GPA Station
MC-50 Multiplex Rack No. 1

		EXPECTED	ACTUAL
1.	MASTER OSCILLATOR LEVELS		
	TP1	(1.0v±0.1v)	<u>N/A</u> v
	TP3	(1.0v±0.1v)	<u>N/A</u> v
2.	SLAVE OSCILLATOR SYNCHRONIZATION AND OUTPUT LEVELS		
	Scope Pattern	(locked)	<u>W33</u> Int
	TP1	(1.0v ±0.1v)	<u>1.0</u> v
3.	HARMONIC GENERATOR LEVELS	(15v pp min)	<u>16.0</u> v
4.	CHANNEL CARRIER SUPPLY		
	Channel 1 64 kc	(1.1v min)	<u>N/A</u> v
	Channel 2 68 kc	(1.1v min)	<u>N/A</u> v
	Channel 3 72 kc	(1.1v min)	<u>N/A</u> v
	Channel 4 76 kc	(1.1v min)	<u>N/A</u> v
	Channel 5 80 92 KC	(1.1v min)	<u>1.36</u> v
	Channel 6 84 88 KC	(1.1v min)	<u>1.35</u> v
	Channel 7 88 84 KC	(1.1v min)	<u>1.30</u> v
	Channel 8 92 80 KC	(1.1v min)	<u>1.40</u> v
	Channel 9 96 kc	(1.1v min)	<u>N/A</u> v
	Channel 10 100 kc	(1.1v min)	<u>N/A</u> v
	Channel 11 104 kc	(1.1v min)	<u>N/A</u> v
	Channel 12 108 kc	(1.1v min)	<u>N/A</u> v
5.	GROUP CARRIER SUPPLY	(2v±0.2v)	<u>N/A</u> v
6.	CHANNEL CARRIER LEAK		
	Channel 1 64 kc	(.13 mv max)	<u>N/A</u> mv
	Channel 2 68 kc	(.13 mv max)	<u>N/A</u> mv
	Channel 3 72 kc	(.13 mv max)	<u>N/A</u> mv
	Channel 4 76 kc	(.13 mv max)	<u>N/A</u> mv
	Channel 5 80 92 KC	(.13 mv max)	<u>.28</u> mv
	Channel 6 84 88 KC	(.13 mv max)	<u>.09</u> mv
	Channel 7 88 84 KC	(.13 mv max)	<u>.25</u> mv
	Channel 8 92 80 KC	(.13 mv max)	<u>.21</u> mv
	Channel 9 96 kc	(.13 mv max)	<u>N/A</u> mv
	Channel 10 100 kc	(.13 mv max)	<u>N/A</u> mv
	Channel 11 104 kc	(.13 mv max)	<u>N/A</u> mv
	Channel 12 108 kc	(.13 mv max)	<u>N/A</u> mv

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

STATION GABTransmission Path: From Station GAB to Station GPAMultiplex Rack No. 1

		EXPECTED	ACTUAL
7.	GROUP CARRIER LEAK	(1mv max)	<u>N/A</u> mv
8.	SIGNALLING SUPPLY LEVEL	(2v. $\pm 0.2v$)	<u>2.05</u> mv
9.	CHANNEL TRANSMIT LEVEL AT GROUP LEVEL (Input to Channel Modulator -1000 cps at -16 dbm)		
	Channel 1 63 kc	(7.8 mv ± 0.8 mv)	<u>N/A</u> mv
	Channel 2 67 kc	(7.8 mv ± 0.8 mv)	<u>N/A</u> mv
	Channel 3 71 kc	(7.8 mv ± 0.8 mv)	<u>N/A</u> mv
	Channel 4 75 kc	(7.8 mv ± 0.8 mv)	<u>N/A</u> mv
	Channel 5 79 kc 91 KC	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 6 83 kc 89 KC	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 7 87 kc 83 KC	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 8 91 kc 79 KC	(7.8 mv ± 0.8 mv)	<u>7.8</u> mv
	Channel 9 95 kc	(7.8 mv ± 0.8 mv)	<u>N/A</u> mv
	Channel 10 99 kc	(7.8 mv ± 0.8 mv)	<u>N/A</u> mv
	Channel 11 103 kc	(7.8 mv ± 0.8 mv)	<u>N/A</u> mv
	Channel 12 107 kc	(7.8 mv ± 0.8 mv)	<u>N/A</u> mv
10.	SIGNALLING LEVEL (AT GROUP INPUT) 3825 cps		
	Channel 1 60.175 kc	(.125 mv ± 0.02 mv)	<u>N/A</u> mv
	Channel 2 64.175 kc	(.125 mv ± 0.02 mv)	<u>N/A</u> mv
	Channel 3 68.175 kc	(.125 mv ± 0.02 mv)	<u>N/A</u> mv
	Channel 4 72.175 kc	(.125 mv ± 0.02 mv)	<u>N/A</u> mv
88.175 KC	Channel 5 76.175 kc	(.125 mv ± 0.02 mv)	<u>.13</u> mv
84.175 KC	Channel 6 80.175 kc	(.125 mv ± 0.02 mv)	<u>.144</u> mv
80.175 KC	Channel 7 84.175 kc	(.125 mv ± 0.02 mv)	<u>.145</u> mv
76.175 KC	Channel 8 88.175 kc	(.125 mv ± 0.02 mv)	<u>.115</u> mv
	Channel 9 92.175 kc	(.125 mv ± 0.02 mv)	<u>N/A</u> mv
	Channel 10 96.175 kc	(.125 mv ± 0.02 mv)	<u>N/A</u> mv
	Channel 11 100.175 kc	(.125 mv ± 0.02 mv)	<u>N/A</u> mv
	Channel 12 104.175 kc	(.125 mv ± 0.02 mv)	<u>N/A</u> mv

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

STATION GABTransmission Path: From Station GAB TO Station GPAMultiplex Rack No. 1

	EXPECTED	ACTUAL
II. GROUP TRANSMIT LEVEL		
MRC-85, MRC-80 & FRC-39A(V) Stations	(13.7mv \pm 0.7 mv)	<u>N/A</u> mv
MW503A LOS Stations	(4.9 mv \pm 0.2mv)	<u>4.9</u> mv
MRC-85 & FRC-39A(V) Modulator Input Level	(27.4mv \pm 1.5 mv)	<u>N/A</u> mv
MRC-80 Transmitter Input Level	(-10 dbm \pm 0.5 dbm)	<u>N/A</u> dbm
MW503A Transmitter Input Level	(7.7 mv \pm 0.3 mv)	<u>7.7</u> mv
12. GROUP RECEIVE LEVEL		
GRP IN (TP7)		
MRC-85, MRC-80 & FRC-39A(V)	(13.7mv \pm 0.8 mv)	<u>N/A</u> mv
MW-503A LOS (except GPA)	(15.5 mv \pm 0.9 mv)	<u>15.2</u> mv
MW-503A LOS (GPA only)	(7.7 mv \pm 0.5 mv)	<u>N/A</u> mv
GRP OUT (TP4)	(18 mv \pm 1 mv)	<u>18.0</u> mv
13. CHANNEL RECEIVE LEVELS		
VF REC Test Point		
Channel 1	(-31 dbm \pm 1 dbm)	<u>N/A</u> dbm
Channel 2	(-31 dbm \pm 1 dbm)	<u>N/A</u> dbm
Channel 3	(-31 dbm \pm 1 dbm)	<u>N/A</u> dbm
Channel 4	(-31 dbm \pm 1 dbm)	<u>N/A</u> dbm
Channel 5	(-31 dbm \pm 1 dbm)	<u>-31.0</u> dbm
Channel 6	(-31 dbm \pm 1 dbm)	<u>-31.0</u> dbm
Channel 7	(-31 dbm \pm 1 dbm)	<u>-31.0</u> dbm
Channel 8	(-31 dbm \pm 1 dbm)	<u>-31.0</u> dbm
Channel 9	(-31 dbm \pm 1 dbm)	<u>N/A</u> dbm
Channel 10	(-31 dbm \pm 1 dbm)	<u>N/A</u> dbm
Channel 11	(-31 dbm \pm 1 dbm)	<u>N/A</u> dbm
Channel 12	(-31 dbm \pm 1 dbm)	<u>N/A</u> dbm

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX TEST

BRH/41

STATION GAB

Transmission Path: From Station GAB to Station GPA

Multiplex Rack No. 1

EXPECTED

ACTUAL

13. CHANNEL RECEIVE LEVELS-continued

Channel VF Out

Channel 1	(+7 dbm \pm 0.5 db)	<u>N/A dbm</u>
Channel 2	(+7 dbm \pm 0.5 db)	<u>N/A dbm</u>
Channel 3	(+7 dbm \pm 0.5 db)	<u>N/A dbm</u>
Channel 4	(+7 dbm \pm 0.5 db)	<u>N/A dbm</u>
Channel 5	(+7 dbm \pm 0.5 db)	<u>-7.0 dbm</u>
Channel 6	(+7 dbm \pm 0.5 db)	<u>-7.0 dbm</u>
Channel 7	(+7 dbm \pm 0.5 db)	<u>-7.0 dbm</u>
Channel 8	(+7 dbm \pm 0.5 db)	<u>-7.0 dbm</u>
Channel 9	(+7 dbm \pm 0.5 db)	<u>N/A dbm</u>
Channel 10	(+7 dbm \pm 0.5 db)	<u>N/A dbm</u>
Channel 11	(+7 dbm \pm 0.5 db)	<u>N/A dbm</u>
Channel 12	(+7 dbm \pm 0.5 db)	<u>N/A dbm</u>

DATE 18 JULY 1963

TESTER W. J. Schreiner

SUPERVISOR Samuel J. Skojinski

QUALITY ASSURANCE Robert S. Legler

GEEIA Robert S. Legler

Sheet 4 of 4

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FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX LINK TEST

Transmission Path: From 1C Station 1D
Station to 1E Station
Multiplex Group No. 1 & 2

		EXPECTED	ACTUAL	
			Hi Group	Lo Group
1. GROUP INPUT LEVEL				
Channel 1	63 kc	(7.8 mv \pm 0.8 mv)	8.4 _____ mv	7.6
Channel 2	67 kc	(7.8 mv \pm 0.8 mv)	8.0 _____ mv	8.0
Channel 3	71 kc	(7.8 mv \pm 0.8 mv)	8.0 _____ mv	8.0
Channel 4	75 kc	(7.8 mv \pm 0.8 mv)	8.0 _____ mv	7.9
Channel 5	79 kc	(7.8 mv \pm 0.8 mv)	8.0 _____ mv	8.0
Channel 6	83 kc	(7.8 mv \pm 0.8 mv)	8.35 _____ mv	8.1
Channel 7	87 kc	(7.8 mv \pm 0.8 mv)	8.1 _____ mv	8.1
Channel 8	91 kc	(7.8 mv \pm 0.8 mv)	8.1 _____ mv	8.1
Channel 9	95 kc	(7.8 mv \pm 0.8 mv)	7.9 _____ mv	8.0
Channel 10	99 kc	(7.8 mv \pm 0.8 mv)	8.1 _____ mv	8.0
Channel 11	103 kc	(7.8 mv \pm 0.8 mv)	8.25 _____ mv	8.2
Channel 12	107 kc	(7.8 mv \pm 0.8 mv)	8.0 _____ mv	8.4

CHANNEL SIGNALLING LEVEL AT GROUP INPUT

Channel 1	60.125 kc	(.125 mv \pm 0.02 mv)	.115 _____ mv	.128
Channel 2	64.125 kc	(.125 mv \pm 0.02 mv)	.115 _____ mv	.128
Channel 3	68.125 kc	(.125 mv \pm 0.02 mv)	.120 _____ mv	.120
Channel 4	72.125 kc	(.125 mv \pm 0.02 mv)	.120 _____ mv	.125
Channel 5	76.125 kc	(.125 mv \pm 0.02 mv)	.120 _____ mv	.110
Channel 6	80.125 kc	(.125 mv \pm 0.02 mv)	.120 _____ mv	.128
Channel 7	84.125 kc	(.125 mv \pm 0.02 mv)	.112 _____ mv	.112
Channel 8	88.125 kc	(.125 mv \pm 0.02 mv)	.124 _____ mv	.140
Channel 9	92.125 kc	(.125 mv \pm 0.02 mv)	.116 _____ mv	.127
Channel 10	96.125 kc	(.125 mv \pm 0.02 mv)	.123 _____ mv	.135
Channel 11	100.125 kc	(.125 mv \pm 0.02 mv)	.140 _____ mv	.127
Channel 12	104.125 kc	(.125 mv \pm 0.02 mv)	.130 _____ mv	.139

3. GROUP TRANSMIT LEVEL

MRC-85, MRC-80 & FRC-39	(13.7 mv \pm 0.7 mv)	N/A _____ mv	13.8
A(V) Stations			
MW503A, LOS Stations	(4.9 mv \pm 0.2 mv)	N/A _____ mv	N/A

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX LINK TEST

Transmission Path From Station 1C To Station 1D
1D 1C

Multiplex Group No. - #2 - Low

	EXPECTED	ACTUAL	
	Hi Group		Low Group
GROUP RECEIVE LEVEL			
GRP IN (TP-7)			
MRC-85, MRC-80 & FRC-39A(V)	(13.7 mv \pm 1.5 mv)	N/A	13.7
MW-503A LOS (except GPA)	(15.5 mv \pm 1.8 mv)	N/A	N/A
MW-503A LOS (GPA only)	(7.7 mv \pm 1.0 mv)	N/A	N/A
GRP OUT (TP-4)	(18.0 mv \pm 1.0 mv)	N/A	18.5

CHANNEL RECEIVE LEVELS

Channel	Expected	Actual
Channel 1	(± 7 dbm ± 0.5 db)	7.0
Channel 2	(± 7 dbm ± 0.5 db)	6.5
Channel 3	(± 7 dbm ± 0.5 db)	7.0
Channel 4	(± 7 dbm ± 0.5 db)	7.2
Channel 5	(± 7 dbm ± 0.5 db)	7.4
Channel 6	(± 7 dbm ± 0.5 db)	7.5
Channel 7	(± 7 dbm ± 0.5 db)	7.0
Channel 8	(± 7 dbm ± 0.5 db)	7.0
Channel 9	(± 7 dbm ± 0.5 db)	7.2
Channel 10	(± 7 dbm ± 0.5 db)	7.3
Channel 11	(± 7 dbm ± 0.5 db)	7.1
Channel 12	(± 7 dbm ± 0.5 db)	7.0

CHANNEL FREQUENCY RESPONSE
Due to varying oscillator levels at site 1C, channels were spot checked at:
1000, 1250, 1500, 2250, 3000 & 3400 & recorded.

EXPECTED ACTUAL

Channels	1	2	3	4	5	6	7	8	9	10	11	12
Frequency												
300	8.0	7.0	8.5	6.0	7.75	6.25	8.0	6.5	8.5	7.5	7.0	7.0
400	8.0	6.5	7.5	6.0	7.0	6.5	7.25	6.5	8.0	7.5	6.5	7.0
500	8.0	6.5	7.5	7.5	8.0	7.75	7.75	7.0	8.0	8.0	7.0	7.0
750	7.75	6.5	7.0	7.5	7.5	7.5	7.25	7.25	7.5	7.75	7.25	6.5
1000	8.0	7.25	7.5	8.0	8.0	8.0	7.5	8.0	7.75	8.0	8.0	7.5
1250	7.75	6.75	7.75	8.25	8.0	8.0	7.75	7.75	7.5	8.0	7.5	7.25

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
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MC-50 MULTIPLEX LINK TEST

STATION L.D.Transmission Path: From Station 1.P To Station 1.DMultiplex Group No. Low Group

CHANNEL FREQUENCY RESPONSE (continued)

Channels Frequency	EXPECTED			ACTUAL								
	1	2	(3)	4	5	6	7	(8)	9	10	(11)	12
1500	7.5	7	8	8.4	8.5	8	8.25	8	7.75	8.25	7.25	7.25 dbm
1750	7.5	6.5	7.5	8	8	8	7	(6.5)	7.5	8	(6.5)	7 dbm
2000	7.5	6.5	8	8	8	8	8	8	7	7.75	(6)	7 dbm
2250	8.25	7	(9)	7.75	8	7.5	8	7.75	7.5	8	7	8 dbm
2400	8	6.75	8.25	7.5	7.75	7.25	7.75	7.5	7	7.75	6.5	7.5 dbm
2750	7.5	7	(9)	7.25	7.5	7.25	7.75	7	7.25	7.5	7	7 dbm
3000	7.75	7.25	(9.25)	7.25	7.75	7.5	8.5	7	7.5	7.75	7.5	7.75 dbm
3200	7.5	6	8	6.5	7.5	7	7.75	5.5	7.5	7	6.5	7 dbm
3300	7.5	5	7	6.5	7.5	6.75	7.75	(4.25)	7.25	7	6	6 dbm
3400	8	5.25	7	7.5	8.25	7.5	8	(4.5)	7.75	7.5	6.25	5.75 dbm

LIMITS WITH RESPECT TO 1 KC. LEVEL

300-399 cps (\pm 0.75 db, -2.9 db)

400-599 cps (+ 0.75 db, -1.5 db)

600-2400 cps (+0.75 db, -0.75 db)

2401-3000 cps (+0.75 db, -1.5 db)

3001-3400 cps (+0.75 db, -2.9 db)

NOTE: If a channel does not meet the above limits and cross connections are rearranged on the VF Amplifier Card, the complete response for that channel will be rechecked and the new figures recorded.

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BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX LINK TEST

STATION 1.DTransmission Path; From 1.C Station to 1.D StationMultiplex Group No. Low Group

8. GAIN CHANGE

OUTPUT LEVEL	EXPECTED	ACTUAL
Input Level		-16 dbm ref. -14 dbm -2dbm
Channel 1	S e e B e l o w	<u>+7</u> dbm <u>+9</u> dbm <u>+13</u> dbm
Channel 2		<u> </u> dbm <u> </u> dbm <u> </u> dbm
Channel 3		<u>+8</u> dbm <u>+10</u> dbm <u>+13</u> dbm
Channel 4		<u> </u> dbm <u> </u> dbm <u> </u> dbm
Channel 5		<u>+8</u> dbm <u>+10</u> dbm <u>+13</u> dbm
Channel 6		<u> </u> dbm <u> </u> dbm <u> </u> dbm
Channel 7		<u>+8</u> dbm <u>+10</u> dbm <u>+13</u> dbm
Channel 8		<u> </u> dbm <u> </u> dbm <u> </u> dbm
Channel 9		<u>+8</u> dbm <u>+10</u> dbm <u>+13</u> dbm
Channel 10		<u> </u> dbm <u> </u> dbm <u> </u> dbm
Channel 11		<u>+8</u> dbm <u>+10</u> dbm <u>+14</u> dbm
Channel 12		<u> </u> dbm <u> </u> dbm <u> </u> dbm

LIMITS

- Channel output level should increase at least 1.65 db with a 2 db increase in channel input level (from -16 dbm input to -14 dbm input)
- Channel output level should not increase more than 8 db with a 14 db increase in channel input level (from -16 dbm input to -2 dbm input)

DATE 17-JUNE-63TESTER K. NelsonSUPERVISOR R. GibbonsQUALITY ASSURANCE B. J. Ross

FEDERAL ELECTRIC CORPORATION
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MC-50 MULTIPLEX LINK TEST

STATION 1CTransmission Path: From 1D Station to 1C Station 1DMultiplex Group No. 1

EXPECTED

ACTUAL

1. GROUP INPUT LEVEL

Channel 1	63 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
Channel 2	67 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
Channel 3	71 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
Channel 4	75 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
Channel 5	79 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
Channel 6	83 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
Channel 7	87 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
Channel 8	91 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
Channel 9	95 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
Channel 10	99 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
Channel 11	103 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
Channel 12	107 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv

2. CHANNEL SIGNALLING LEVEL AT GROUP INPUT N/A AT 1C

Channel 1	60.125 kc	(.125 mv \pm 0.02 mv)	_____ mv
Channel 2	64.125 kc	(.125 mv \pm 0.02 mv)	_____ mv
Channel 3	68.125 kc	(.125 mv \pm 0.02 mv)	_____ mv
Channel 4	72.125 kc	(.125 mv \pm 0.02 mv)	_____ mv
Channel 5	76.125 kc	(.125 mv \pm 0.02 mv)	_____ mv
Channel 6	80.125 kc	(.125 mv \pm 0.02 mv)	_____ mv
Channel 7	84.125 kc	(.125 mv \pm 0.02 mv)	_____ mv
Channel 8	88.125 kc	(.125 mv \pm 0.02 mv)	_____ mv
Channel 9	92.125 kc	(.125 mv \pm 0.02 mv)	_____ mv
Channel 10	96.125 kc	(.125 mv \pm 0.02 mv)	_____ mv
Channel 11	100.125 kc	(.125 mv \pm 0.02 mv)	_____ mv
Channel 12	104.125 kc	(.125 mv \pm 0.02 mv)	_____ mv

3. GROUP TRANSMIT LEVEL

MRC-85, MRC-80 & FRC-39	(13.7 mv \pm 0.7 mv)	<u>13.7</u> mv
A(V) Stations		
MW503A LOS Stations	(4.9 mv \pm 0.2 mv)	<u>N/A</u> mv

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX LINK TEST

STATION 1CTransmission Path From Station 1D To Station 1CMultiplex Group No. - 1

EXPECTED ACTUAL

4. GROUP RECEIVE LEVEL

GRP IN (TP-7)

MRC-85, MRC-80 &
FRC-39A(V)(13.7 mv \pm 1.5 mv)14 mv

MW-503A LOS (except GPA)

(15.5 mv \pm 1.8 mv)14 mv

MW-503A LOS (GPA only)

(7.7 mv \pm 1.0 mv)14 mv

GRP OUT (TP-4)

(18.0 mv \pm 1.0 mv)14 mv

5. CHANNEL RECEIVE LEVELS

Channel 1

(± 7 dbm ± 0.5 db)+7 dbm

Channel 2

(± 7 dbm ± 0.5 db)+7 dbm

Channel 3

(± 7 dbm ± 0.5 db)+7 dbm

Channel 4

(± 7 dbm ± 0.5 db)+7 dbm

Channel 5

(± 7 dbm ± 0.5 db)+7 dbm

Channel 6

(± 7 dbm ± 0.5 db)+7 dbm

Channel 7

(± 7 dbm ± 0.5 db)+7 dbm

Channel 8

(± 7 dbm ± 0.5 db)+7 dbm

Channel 9

(± 7 dbm ± 0.5 db)+7 dbm

Channel 10

(± 7 dbm ± 0.5 db)+7 dbm

Channel 11

(± 7 dbm ± 0.5 db)+7 dbm

Channel 12

(± 7 dbm ± 0.5 db)+7 dbm

6. CHANNEL FREQUENCY RESPONSE

EXPECTED

ACTUAL

Channels

1 2 3 4 (5) 6 (7) 8 9 (10) (11) 12

Frequency

300

+7.5 +8 +8 +5 (+9) +6 (+8) +7 +7 (+8.5) (-4) +7.5 dbm

400

S

+7 +7 +7 +6 +7.5 +7 (+8) +7 +7 +7 (-8) +7 dbm

600

e

+7 +7 +8 +7 +7.5 +7.5 +7.5 +7.5 +7 +7.5 (-1) +7 dbm

750

B

+7 +7 +8 +7 +7.5 +7.5 +7 +7 (+8) +7.5 (-4) +7 dbm

1000

e

+7 +7.5 +7.5 +7 +7 +7.5 +7 +7 +7 +7 +7 +7 dbm

1250

O

+7 +7.5 +7.5 +7 +7 +7.5 +7 +7 +7.5 +7 (+8) +7 dbm

w

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX LINK TEST

STATION 1CTransmission Path: From Station 1D To Station 1CMultiplex Group No. 1, Low

CHANNEL FREQUENCY RESPONSE (continued)

Channels Frequency	EXPECTED				ACTUAL							
	(1)	2	3	4	(5)	6	(7)	8	(9)	(10)	(11)	(12)
1500	+7	+7	+7	+7.5	(+8)	+7	(+8)	+7.5	+7.5	(+8)	(+9)	+7 dbm
1750	+7.5	+7	+7.5	+7.5	+7	+7	(+8)	+7	(+8)	(+8)	(+9.5)	+7 dbm
2000	(+8)	+7	+8	+7.5	(+8)	+7	(+8)	+7	(+8)	(+8)	(+9)	(+6) dbm
2250	(+8)	+7	+7.5	+7	(+8)	+7	+7.5	+7	+7.5	+7.5	(+10)	(+6.5) dbm
2400	(+8)	+7.5	+7.5	+7.5	+8	+7	+7.5	+7	+7.5	+7.5	(+10)	(+6) dbm
2750	+7.5	+8	+8	+7	+8	+7	+7	+7	+7	+7.5	(+10)	(+6) dbm
3000	(+8)	+7.5	+8	+6	(+8)	+6	+7	+7	+7.5	+7	(+9.5)	(+6) dbm
3200	(+8.5)	+6	+7.5	+5	+8	+5	+7	+6.5	+7	+7	(+9)	(+5.5) dbm
3300	(+9)	(+5.5)	+7	+5	(+8)	+5	+7	+6	+7.5	+7	(+8.5)	+5 dbm
3400	+7	+5	+7	+5	(+8.5)	+5	+7	+6.5	+5	+7.5	(+8)	(+4) dbm

LIMITS WITH RESPECT TO 1 KC LEVEL

300-399 cps (+ 0.75 db, -2.9 db)

400-599 cps (+ 0.75 db, -1.5 db)

600-2400 cps (+0.75 db, -0.75 db)

2401-3000 cps (+0.75 db, -1.5 db)

3001-3400 cps (+0.75 db, -2.9 db)

NOTE: If a channel does not meet the above limits and cross connections are rearranged on the VF Amplifier Card, the complete response for that channel will be rechecked and the new figures recorded.

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX LINK TEST

STATION 1CTransmission Path; From 1D Station to 1C StationMultiplex Group No. 1

8. GAIN CHANGE

OUTPUT LEVEL

EXPECTED

ACTUAL

Input Level

Channel 1

Channel 2

Channel 3

Channel 4

Channel 5

Channel 6

Channel 7

Channel 8

Channel 9

Channel 10

Channel 11

Channel 12

S
e
e
B
e
l
o
w

Channel	Expected	Actual
Channel 1	8 dbm	10 dbm +13.5 dbm
Channel 2	8 dbm	10 dbm +13.5 dbm
Channel 3	8.5 dbm	10.5 dbm +13.5 dbm
Channel 4	+8 dbm	+10 dbm +13.5 dbm
Channel 5	+8 dbm	+10 dbm +13.5 dbm
Channel 6	+8.5 dbm	+10 dbm +13 dbm
Channel 7	8 dbm	10.5 dbm 12 dbm
Channel 8	7.5 dbm	+10 dbm +13 dbm
Channel 9	8.5 dbm	+10.2 dbm +14 dbm
Channel 10	8 dbm	10 dbm 12.5 dbm
Channel 11	7.5 dbm	9.5 dbm 12 dbm
Channel 12	8 dbm	9 dbm 9.5 dbm

LIMITS

- Channel output level should increase at least 1.65 db with a 2 db increase in channel input level (from -16 dbm input to -14 dbm input)
- Channel output level should not increase more than 8 db with a 14 db increase in channel input level (from -16 dbm input to -2 dbm input)

DATE 17 JUNE 63TESTER J. DeckerSUPERVISOR J. H. EdwardsQUALITY ASSURANCE William R. VothCEEIA Robert S. Legler

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX LINK TEST

STATION GPATransmission Path: From GPA Station to GAB StationMultiplex Group No. Rack # 1

		EXPECTED	ACTUAL
1.	GROUP INPUT LEVEL		
	Channel 1 63 kc	(7.8 mv \pm 0.8 mv)	<u>N/A</u> mv
	Channel 2 67 kc	(7.8 mv \pm 0.8 mv)	<u>''</u> mv
	Channel 3 71 kc	(7.8 mv \pm 0.8 mv)	<u>''</u> mv
	Channel 4 75 kc	(7.8 mv \pm 0.8 mv)	<u>''</u> mv
	Channel 5 91 97 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 6 87 88 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 7 83 84 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 8 79 81 kc	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 9 95 kc	(7.8 mv \pm 0.8 mv)	<u>N/A</u> mv
	Channel 10 99 kc	(7.8 mv \pm 0.8 mv)	<u>''</u> mv
	Channel 11 103 kc	(7.8 mv \pm 0.8 mv)	<u>''</u> mv
	Channel 12 107 kc	(7.8 mv \pm 0.8 mv)	<u>''</u> mv
2.	CHANNEL SIGNALLING LEVEL AT GROUP INPUT		
	See note		
	Channel 1 60.125 kc	(.125 mv \pm 0.02 mv)	<u>N/A</u> mv
	Channel 2 64.125 kc	(.125 mv \pm 0.02 mv)	<u>''</u> mv
	Channel 3 68.125 kc	(.125 mv \pm 0.02 mv)	<u>''</u> mv
	Channel 4 72.125 kc	(.125 mv \pm 0.02 mv)	<u>''</u> mv
	Channel 5 88 89.125 kc	(.125 mv \pm 0.02 mv)	<u>.4</u> mv
	Channel 6 84 85.125 kc	(.125 mv \pm 0.02 mv)	<u>.4</u> mv
	Channel 7 80 81.125 kc	(.125 mv \pm 0.02 mv)	<u>.4</u> mv
	Channel 8 79 80.125 kc	(.125 mv \pm 0.02 mv)	<u>.4</u> mv
	Channel 9 92.125 kc	(.125 mv \pm 0.02 mv)	<u>N/A</u> mv
	Channel 10 96.125 kc	(.125 mv \pm 0.02 mv)	<u>''</u> mv
	Channel 11 100.125 kc	(.125 mv \pm 0.02 mv)	<u>''</u> mv
	Channel 12 104.125 kc	(.125 mv \pm 0.02 mv)	<u>''</u> mv
3.	GROUP TRANSMIT LEVEL		
	MRC-85, MRC-80 & FRC-39	(13.7 mv \pm 0.7 mv)	<u>N/A</u> mv
	A(V) Stations		
	MW503A LOS Stations	(4.9 mv \pm 0.2 mv)	<u>4.9</u> mv

Note: It has been changed to .4 mv to conform with Motorola specs.
per Mr. H. Detweiler, F.E.C. Engineer.

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX LINK TEST

STATION GPA

Transmission Path From Station GPA To Station GAB

Multiplex Group No. - Rack #1

	EXPECTED	ACTUAL
4. GROUP RECEIVE LEVEL		
GRP IN (TP-7)		
MRC-85, MRC-80 & FRC-39A(V)	(13.7 mv \pm 1.5 mv)	<u>N/A</u> mv
MW-503A LOS (except GPA)	(15.5 mv \pm 1.8 mv)	<u>15.5</u> mv
MW-503A LOS (GPA only) to GA..	(7.7 mv \pm 1.0 mv)	<u>N/A</u> mv
GRP OUT (TP-4)	(18.0 mv \pm 1.0 mv)	<u>18.0</u> mv

5. CHANNEL RECEIVE LEVELS

Channel 1	(± 7 dbm ± 0.5 db)	<u>N/A</u> dbm
Channel 2	(± 7 dbm ± 0.5 db)	<u>11</u> dbm
Channel 3	(± 7 dbm ± 0.5 db)	<u>11</u> dbm
Channel 4	(± 7 dbm ± 0.5 db)	<u>11</u> dbm
Channel 5	(± 7 dbm ± 0.5 db)	<u>7</u> dbm
Channel 6	(± 7 dbm ± 0.5 db)	<u>+7</u> dbm
Channel 7	(± 7 dbm ± 0.5 db)	<u>+7</u> dbm
Channel 8	(± 7 dbm ± 0.5 db)	<u>+7</u> dbm
Channel 9	(± 7 dbm ± 0.5 db)	<u>N/A</u> dbm
Channel 10	(± 7 dbm ± 0.5 db)	<u>11</u> dbm
Channel 11	(± 7 dbm ± 0.5 db)	<u>11</u> dbm
Channel 12	(± 7 dbm ± 0.5 db)	<u>11</u> dbm

Note: Adjusted to +7.

6. CHANNEL FREQUENCY RESPONSE

		EXPECTED				ACTUAL							
Channels		1	2	3	4	5	6	7	8	9	10	11	12
Frequency													
300		N/A	N/A	N/A	N/A	6.6	6.6	7.7	5.75 6.6	N/A	N/A	N/A	N/A
400	S					7	6.8	7.4	6.7				
600	e					7.5	7.4	7.5	7.5				
750	B					7.5	7.4	7.3	7.4				
1000	e					7	7	7	7.0				
1250	l					7	6.5	7	7.2				
	o												
	w												

1/30/64

BR II/42
ADDENDUM
Ref; DD 250/5W

Station GAB
Test Results

TEST: Transmission Path GPA to station GAB
MULTIPLEX group No. 2

6.Channel Frequency Response

Channel	8
Frequency	
300	5.75
400	6.7
600	7.0
750	7.0
1000	7.0
1250	7.2
1500	7.0
1750	7.0
2000	6.8
2250	6.8
2400	7.2
2750	7.6
3000	7.3
3200	6.9
3300	6.0
3400	5.0

mc - PA

2-37A

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX LINK TEST

STATION GPATransmission Path: From Station GPA To Station GABMultiplex Group No. Rack #1

CHANNEL FREQUENCY RESPONSE (continued)

Channels Frequency	EXPECTED				ACTUAL								
	1	2	3	4	5	6	7	8	9	10	11	12	
1500	N/A	N/A	N/A	N/A	7.5	6.7	7.5	7.2	N/A	N/A	N/A	N/A	dbm
1750					7.5	7	7.7	7.5					dbm
2000					7.4	7	7.6	7.5					dbm
2250					7.2	7.1	7.5	7.5					dbm
2400					7.2	7.2	7.5	7.5					dbm
2750					7.3	7.3	7.5	7.85	see note				dbm
3000					6.6	6.9	7.3	7.7					dbm
3200					6.4	6.5	7.3	7.5					dbm
3300					6.6	6.5	7.3	7.2					dbm
3400					6.8	6.4	7.3	6.7					dbm

Note : 7.85 is out of specs.
LIMITS WITH RESPECT TO 1 KC LEVEL

300-399 cps (+ 0.75 db, -2.9 db)

400-599 cps (+ 0.75 db, -1.5 db)

600-2400 cps (+0.75 db, -0.75 db)

2401-3000 cps (+0.75 db, -1.5 db)

3001-3400 cps (+0.75 db, -2.9 db)

NOTE: If a channel does not meet the above limits and cross connections are rearranged on the VF Amplifier Card, the complete response for that channel will be rechecked and the new figures recorded.

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX LINK TEST

STATION GPA Transmission Path; From GPA Station to GAB StationMultiplex Group No. Rack # 1

8. GAIN CHANGE

OUTPUT LEVEL

EXPECTED

ACTUAL

Input Level

Channel 1

Channel 2

Channel 3

Channel 4

Channel 5

Channel 6

Channel 7

Channel 8

Channel 9

Channel 10

Channel 11

Channel 12

S
e
e
B
e
l
o
w

	-16 dbm ref.	-14 dbm	-2dbm
Channel 1	N/A dbm	N/A dbm	N/A dbm
Channel 2	' ' dbm	' ' dbm	' ' dbm
Channel 3	' ' dbm	' ' dbm	' ' dbm
Channel 4	' ' dbm	' ' dbm	' ' dbm
Channel 5	+6.85 dbm	+8.7 dbm	+13.5 dbm
Channel 6	+6.85 dbm	+8.7 dbm	+13.5 dbm
Channel 7	+6.85 dbm	+8.7 dbm	+13.0 dbm
Channel 8	+6.85 dbm	+8.7 dbm	+12 dbm
Channel 9	N/A dbm	N/A dbm	N/A dbm
Channel 10	↑ dbm	↑ dbm	↑ dbm
Channel 11	↑ dbm	↑ dbm	↑ dbm
Channel 12	↑ dbm	↑ dbm	↑ dbm

LIMITS

- Channel output level should increase at least 1.65 db with a 2 db increase in channel input level (from -16 dbm input to -14 dbm input)
- Channel output level should not increase more than 8 db with a 14 db increase in channel input level (from -16 dbm input to -2 dbm input)

DATE 20 July 1963TESTER W. S. HenrySUPERVISOR J. W. KennedyQUALITY ASSURANCE W. EwingGEEIA S. Felant

FEDERAL ELECTRIC CORPORATION
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DATA SHEET
MC-50 MULTIPLEX LINK TEST

STATION GABTransmission Path: From GAB Station to GPA StationMultiplex Group No. 1

		EXPECTED	ACTUAL
1.	GROUP INPUT LEVEL		
	Channel 1 63 kc	(7.8 mv \pm 0.8 mv)	<u>N/A</u> mv
	Channel 2 67 kc	(7.8 mv \pm 0.8 mv)	<u>N/A</u> mv
	Channel 3 71 kc	(7.8 mv \pm 0.8 mv)	<u>N/A</u> mv
	Channel 4 75 kc	(7.8 mv \pm 0.8 mv)	<u>N/A</u> mv
	Channel 5 79 kc <u>91</u> KC	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 6 83 kc <u>87</u> KC	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 7 87 kc <u>83</u> KC	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 8 91 kc <u>97</u> KC	(7.8 mv \pm 0.8 mv)	<u>7.8</u> mv
	Channel 9 95 kc	(7.8 mv \pm 0.8 mv)	<u>N/A</u> mv
	Channel 10 99 kc	(7.8 mv \pm 0.8 mv)	<u>N/A</u> mv
	Channel 11 103 kc	(7.8 mv \pm 0.8 mv)	<u>N/A</u> mv
	Channel 12 107 kc	(7.8 mv \pm 0.8 mv)	<u>N/A</u> mv

2. CHANNEL SIGNALLING LEVEL AT GROUP INPUT

	Channel 1 60.125 kc	(.125 mv \pm 0.02 mv)	<u>N/A</u> mv
	Channel 2 64.125 kc	(.125 mv \pm 0.02 mv)	<u>N/A</u> mv
	Channel 3 68.125 kc	(.125 mv \pm 0.02 mv)	<u>N/A</u> mv
	Channel 4 72.125 kc	(.125 mv \pm 0.02 mv)	<u>N/A</u> mv
<u>88.175</u> KC	Channel 5 76.125 kc	(.125 mv \pm 0.02 mv)	<u>.13</u> mv
<u>84.175</u> KC	Channel 6 80.125 kc	(.125 mv \pm 0.02 mv)	<u>.14</u> mv
<u>80.175</u> KC	Channel 7 84.125 kc	(.125 mv \pm 0.02 mv)	<u>.145</u> mv
<u>76.175</u> KC	Channel 8 88.125 kc	(.125 mv \pm 0.02 mv)	<u>.115</u> mv
	Channel 9 92.125 kc	(.125 mv \pm 0.02 mv)	<u>N/A</u> mv
	Channel 10 96.125 kc	(.125 mv \pm 0.02 mv)	<u>N/A</u> mv
	Channel 11 100.125 kc	(.125 mv \pm 0.02 mv)	<u>N/A</u> mv
	Channel 12 104.125 kc	(.125 mv \pm 0.02 mv)	<u>N/A</u> mv

This test could not be conducted according to the test procedures.

3. GROUP TRANSMIT LEVEL

MRC-85, MRC-80 & FRC-39	(13.7 mv \pm 0.7 mv)	<u>N/A</u> mv
A(V) Stations		
MW503A LOS Stations	(4.9 mv \pm 0.2 mv)	<u>4.9</u> mv

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX LINK TEST

STATION GABTransmission Path From Station GAB To Station GPAMultiplex Group No. - 1

EXPECTED ACTUAL

4. GROUP RECEIVE LEVEL

GRP IN (TP-7)

MRC-85, MRC-80 &
FRC-39A(V)(13.7 mv \pm 1.5 mv)N/A mv

MW-503A LOS (except GPA)

(15.5 mv \pm 1.8 mv)15.5 mv

MW-503A LOS (GPA only)

(7.7 mv \pm 1.0 mv)N/A mv

GRP OUT (TP-4)

(18.0 mv \pm 1.0 mv)18.0 mv

5. CHANNEL RECEIVE LEVELS

Channel 1

(\pm 7 dbm \pm 0.5 db)N/A dbm

Channel 2

(\pm 7 dbm \pm 0.5 db)N/A dbm

Channel 3

(\pm 7 dbm \pm 0.5 db)N/A dbm

Channel 4

(\pm 7 dbm \pm 0.5 db)N/A dbm

Channel 5

(\pm 7 dbm \pm 0.5 db)77.0 dbm

Channel 6

(\pm 7 dbm \pm 0.5 db)77.0 dbm

Channel 7

(\pm 7 dbm \pm 0.5 db)77.0 dbm

Channel 8

(\pm 7 dbm \pm 0.5 db)77.0 dbm

Channel 9

(\pm 7 dbm \pm 0.5 db)N/A dbm

Channel 10

(\pm 7 dbm \pm 0.5 db)N/A dbm

Channel 11

(\pm 7 dbm \pm 0.5 db)N/A dbm

Channel 12

(\pm 7 dbm \pm 0.5 db)N/A dbm

6. CHANNEL FREQUENCY RESPONSE

EXPECTED

ACTUAL

Channels

1 2 3 4 5 6 7 8 9 10 11 12

Frequency

300		N/A	N/A	N/A	N/A	7.1	7.3	7.6	6.7	N/A	N/A	N/A	N/A	dbm
400	S	"	"	"	"	7.0	7.1	7.25	6.75	"	"	"	"	dbm
600	e	"	"	"	"	7.3	7.7	7.75	6.75	"	"	"	"	dbm
750	B	"	"	"	"	7.2	7.3	7.4	6.9	"	"	"	"	dbm
1000	e	"	"	"	"	7.0	7.0	7.0	7.0	"	"	"	"	dbm
1250	l	"	"	"	"	7.1	7.1	6.9	6.95	"	"	"	"	dbm
	0													
	w													

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX LINK TEST

STATION GABTransmission Path: From Station GAB To Station GPAMultiplex Group No. 1

CHANNEL FREQUENCY RESPONSE (continued)

Channels Frequency	EXPECTED				ACTUAL								
	1	2	3	4	5	6	7	8	9	10	11	12	
1500	N/A	N/A	N/A	N/A	7.6	7.3	7.0	7.0	N/A	N/A	N/A	N/A	dbm
1750	"	"	"	"	7.3	7.1	6.9	6.8	"	"	"	"	dbm
2000	"	"	"	"	7.2	6.9	6.9	6.8	"	"	"	"	dbm
2250	"	"	"	"	7.3	6.8	6.8	6.9	"	"	"	"	dbm
2400	"	"	"	"	7.7	6.9	7.0	7.1	"	"	"	"	dbm
2750	"	"	"	"	7.2	7.0	7.1	7.6	"	"	"	"	dbm
3000	"	"	"	"	6.8	6.2	6.8	7.0	"	"	"	"	dbm
3200	"	"	"	"	7.0	6.0	6.1	5.8	"	"	"	"	dbm
3300	"	"	"	"	6.9	5.5	5.5	4.5	"	"	"	"	dbm
3400	"	"	"	"	5.5	5.1	4.8	3.6	"	"	"	"	dbm

LIMITS WITH RESPECT TO 1 KC LEVEL

300-399 cps (\pm 0.75 db, -2.9 db)

400-599 cps (+ 0.75 db, -1.5 db)

600-2400 cps (+0.75 db, -0.75 db)

2401-3000 cps (+0.75 db, -1.5 db)

3001-3400 cps (+0.75 db, -2.9 db)

NOTE: If a channel does not meet the above limits and cross connections are rearranged on the VF Amplifier Card, the complete response for that channel will be rechecked and the new figures recorded.

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
MC-50 MULTIPLEX LINK TEST

STATION GABTransmission Path; From GAB Station to GPA StationMultiplex Group No. 1

8. GAIN CHANGE

OUTPUT LEVEL

EXPECTED

ACTUAL

Input Level

Channel 1

Channel 2

Channel 3

Channel 4

Channel 5

Channel 6

Channel 7

Channel 8

Channel 9

Channel 10

Channel 11

Channel 12

S
e
e
B
e
l
o
w

Channel	Expected	Actual
Channel 1	N/A dbm	N/A dbm
Channel 2	" dbm	" dbm
Channel 3	" dbm	" dbm
Channel 4	" dbm	" dbm
Channel 5	+7.0 dbm	+9.0 dbm
Channel 6	+7.0 dbm	+9.0 dbm
Channel 7	+7.0 dbm	+9.0 dbm
Channel 8	+7.0 dbm	+9.0 dbm
Channel 9	N/A dbm	N/A dbm
Channel 10	" dbm	" dbm
Channel 11	" dbm	" dbm
Channel 12	" dbm	" dbm

LIMITS

- Channel output level should increase at least 1.65 db with a 2 db increase in channel input level (from -16 dbm input to -14 dbm input)
- Channel output level should not increase more than 8 db with a 14 db increase in channel input level (from -16 dbm input to -2 dbm input)

DATE 20 JULY 1963TESTER John H. ThielSUPERVISOR Frank J. StropinskiQUALITY ASSURANCE Robert D. Legler

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FEDERAL ELECTRIC CORPORATION

BR11/61

BIG RALLY II PROJECT

DATA SHEET

AN/TCC-3 MULTIPLEX STATION TEST

STATION GABTransmission Path: From Station GAB toSTATION GEL

TM 1-004 - FEC Installed

TM 1-004 - FEC NOT Installed XXXX

AN/TCC-3 MULTIPLEX

		EXPECTED	ACTUAL
1. Carrier Supply Output Level			
8 kc (TB 901; Terminals 1,2)		.89 \pm 0.15v	<u>.84</u> v.
12 kc (TB 901; Terminals 4,5)		.89 \pm 0.15v	<u>.98</u> v.
16 Kc (TB 901; Terminals 6,7)		.89 \pm 0.15v	<u>.84</u> v.
20 Kc (TB 901; Terminals 9,10)		.89 \pm 0.15v	<u>.90</u> v.
2. Channel Levels			
	Unmodified	Modified	
Channel 1	1 \pm 0.5 dbm	7 \pm 0.5 dbm	<u>1</u> dbm
Channel 2	1 \pm 0.5 dbm	7 \pm 0.5dbm	<u>1</u> dbm
Channel 3	1 \pm 0.5dbm	7 \pm 0.5dbm	<u>1</u> dbm
Channel 4	1 \pm 0.5dbm	7 \pm 0.5dbm	<u>1</u> dbm
3. Channel Noise Measurement			
Channel 1	14dba	20 dba *	<u> </u> dba
Channel 2	14dba	20 dba	<u> </u> dba
Channel 3	14dba	20 dba	<u> </u> dba
Channel 4	14dba	20 dba	<u> </u> dba

* Reading better than 14 DBA. Unable to measure lower than 14 DBA with the TS559 NOISE MEASURING SET

DATE 21 JULY 1963TESTER W. J. SchreinerSUPERVISOR Frank D. SchreinerQUALITY ASSURANCE J. BruchGEEIA Robert A. Legler

FEDERAL ELECTRIC CORPORATION

BR11/61

BIG RALLY II PROJECT
DATA SHEET
AN/TCC-3 MULTIPLEX STATION TEST

STATION GEL
Transmission Path: From Station GEL to STATION GAB

TM 1-004 - FEC Installed _____
TM 1-004 - FEC NOT Installed X

AN/TCC-3 MULTIPLEX

		EXPECTED	ACTUAL
1. Carrier Supply Output Level			
8 kc (TB 90I; Terminals 1,2)		.89 \pm 0.15v	<u>.76</u> v.
12 kc (TB 90I; Terminals 4,5)		.89 \pm 0.15v	<u>.75</u> v.
16 Kc (TB 90I; Terminals 6,7)		.89 \pm 0.15v	<u>.77</u> v.
20 Kc (TB 90I; Terminals 9,10)		.89 \pm 0.15v	<u>.77</u> v.
2. Channel Levels			
	Unmodified	Modified	
Channel 1	1 \pm 0.5 dbm	7 \pm 0.5 dbm	<u>1</u> dbm
Channel 2	1 \pm 0.5 dbm	7 \pm 0.5dbm	<u>1</u> dbm
Channel 3	1 \pm 0.5dbm	7 \pm 0.5dbm	<u>1</u> dbm
Channel 4	1 \pm 0.5dbm	7 \pm 0.5dbm	<u>1</u> dbm
3. Channel Noise Measurement			
Channel 1	14dba	20 dba Below meter scale	<u>11</u> dba
Channel 2	14dba	20 dba	<u>11</u> dba
Channel 3	14dba	20 dba	<u>11</u> dba
Channel 4	14dba	20 dba	<u>11</u> dba

DATE 21 July 1963TESTER George B. BennettSUPERVISOR Andrew J. HorvathQUALITY ASSURANCE Mario's ConfGEEIA L A Pineda

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/TCC-3 MULTIPLEX LINK TEST

BR 11/62

STATION GAB
Transmission Path: From Station ~~GAB~~ ^{GAB} to Station ~~GAB~~ ^{GEL}

CHANNEL GAIN AND FREQUENCY RESPONSE

Frequency	Expected Level	Channels			
		1	2	3	4
1000 cps reference	+ 7±0.5 dbm or + 1±0.5 dbm	_____	+1 _____	+1 _____	+1 _____ dbm
	Expected Level with respect to 1 KC reference				
300	+ 1.5 - 1.5 db	_____	-0.5 _____	+0.5 _____	+0.9 _____ dbm
400	+ 1.5 - 0.4 db	_____	+1.1 _____	+1.3 _____	+1.4 _____ dbm
600	+ 1.5 - 0.25 db	_____	+1.2 _____	+1.0 _____	+1.0 _____ dbm
2400	+ 1.5 - 0.7 db	_____	+1.1 _____	+1.2 _____	+1.0 _____ dbm
3000	+ 1.5 - 0.7 db	_____	+1.3 _____	+0.8 _____	+0.3 _____ dbm
3400	+ 1.5 - 1.25db	_____	+0.5 _____	+0.8 _____	+0.7 _____ dbm

DATE 1-30-64

TESTER [Signature]

SUPERVISOR [Signature]

QUALITY ASSURANCE [Signature]

GEEIA. [Signature]
Sheet 1 of 1

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/TCC-3 MULTIPLEX LINK TEST

BR 11/62

STATION GEL

Transmission Path: From Station GEL to Station GAB

CHANNEL GAIN AND FREQUENCY RESPONSE

Frequency	Expected Level	Channels			
		1	2	3	4
1000 cps reference	+ 7±0.5 dbm or + 1±0.5 dbm	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u> dbm
	Expected Level with respect to 1 KC reference				
300	+1.5 - 1.5 db	<u>-.5</u>	<u>0</u>	<u>-.5</u>	<u>1</u> dbm
400	+1.5 - 0.4 db	<u>.8</u>	<u>1.2</u>	<u>1</u>	<u>.95</u> dbm
600	+1.5 - 0.25 db	<u>1.6</u>	<u>1.1</u>	<u>1</u>	<u>.85</u> dbm
2400	+1.5 - 0.7 db	<u>1</u>	<u>.95</u>	<u>1</u>	<u>1.3</u> dbm
3000	+1.5 - 0.7 db	<u>.85</u>	<u>1.2</u>	<u>.5</u>	<u>.25</u> dbm
3400	+1.5 - 1.25db	<u>.45</u>	<u>0</u>	<u>.7</u>	<u>0</u> dbm

NOTE. ABOVE ARE ACTUAL METER READINGS

DATE 22 JULY 1963

TESTER George B. Barreto

SUPERVISOR Andrew J. Horvath

QUALITY ASSURANCE 1 Bonched

GEE I A O. H. Feltner
Sheet 1 of 1

FEC BIG RALLY II PROJECT
DATA SHEET
MC-50

Station ID

Date 16 June 63

Back to back special tests

Test # 1

Place a terminating resistor plug into the CHAN IN jack of channel # 1 and read the noise on the CHAN OUT jack of channel # 1. Repeat for the remaining 23 channels. *+ 7 db added for connector Factor.*
MIN. REQUIREMENTS 18dbm

High Group channels #	Low Group channels #
1-70.5 *	1-68 *
2-70.5	2-68.5
3-70.5	3-68
4-69.5	4-68.5
5-69.5	5-67.5
6-69.5	6-68.5
7-69.5	7-68
8-68.5	8-68
9-69.5	9-65
10-67	10-67
11-64.5	11-67.5
12-59	12-64

Test # 2

Place a -16db test tone into the CHAN IN jack of the channel indicated. Place a terminating resistor into the adjacent CHAN IN jacks. Read the cross talk on the CHAN OUT jacks as listed.
+ 7 db MUST be added to these figures

Tone on channel	1 Measure on channels
4	3-62 5-62 *
7	6-62.5 8-61.5
10	9-62.5 11-56.5
1	12-61 2-58
4	3-58.5 5-57
7	6-57 8-58.5
10	9-56.5 11-54
12	12-56 ---

band channel Filter

Date 16 June 63
Tester J. E. Jeffers
Supervisor J. E. Jeffers
Quality assurance J. E. Jeffers

NOISE TEST

RX

9FA
GK -TO-IC

MUX RACK #2 EXCITER 2 & 4

BLOCKED

CHANNEL #	SIGNAL	NOISE	SIGNAL TO NOISE
1	+7	-53	-60
2	+7	-55	-62
3	+7	-35	-42
4	+7	-53	-60
5	+7	-52	-59
6	+7	-50	-57
7	+7	-53	-60
8	+7	-40	-47
9	+7	-36	-43
10	+7	-41	-48
11	+7	-46	-53
12	+7	-46	-53

BACK TO BACK

1	+8.5	-58	-66.5
2	+8	-58	-66
3	+7.5	-58	-65.5
4	+7.5	-59	-66.5
5	+7	-60	-67
6	+7	-53	-60
7	+7	-59	-66
8	+7	-59	-66
9	+7.5	-59	-65
10	+7.5	-58	-66.5
11	+7	-59	-63.5
12	+7	-56	-63

*Subtract signal to noise reading from 85 to get dba
Worst channel is channel 6 at 25dba all others are between
22 and 18 DBA

Robert D. Segler

BACK TO BACK SINGLE TONE (1000 CPS) CROSS TALK TEST

FORMAT: CHANNEL # WITH TONE LEVEL TAKEN ONE CHANNEL HIGH
LEVEL TAKEN ONE CHANNEL LOW

CHANNEL	1channel/ Higher	1channel/ Lower
1	3dbm	No Channel low
2	2dbm	2dbm
3	4	4
4	2	2
5	0	6
6	3	1
7	13	1
8	1	2
9	3	4
10	3	2
11	9	2
12	No Channel High	5.5

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DATA SHEET
MC-50

Station GPA -GAB

Back to back id~~e~~ noise

Place a terminating resister into the chann IN jack of each channel and read the resulting noise on the chan OUT jack of each channel. (4 r DBM correction F-1A weighting)

Chan #5 11DBA 0
6 11
7 11
8 11

TEST # 2

Place a -16db test tone into the chan IN jack of the channel indicated. Read the cross talk on the Chan OUT jacks indicated. Terminate the adjacent channels.

NOTONE
CHANNEL NOISE

TONE
LWR

TONE
UPPER

5 11 DBA 0
6 11
7 11
8 11

N/A
11
11
11

12
12
12
N/A

Date 15 JULY 63
Tester James Quinn
Supervisor J. W. Quinn
Quality Assurance William Quinn
GEEIA J. Quinn

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

MAIN LINE ORDER WIRE STATION TEST

STATION 10

NOTE: 1. All EXPECTED levels for each station are given on either Figure 2 or Figure 3.

2. Place an X in the ACTUAL column when the requested measurement is not applicable at the station under test.

TERMINAL CONTROL STATION	TOLERANCE	ACTUAL
1. Circuit A TX (J27)	$\pm 1/2$ db	<u>-13.0</u> dbm
2. Circuit B TX (J29)	± 1 db	<u>-13.0</u> dbm
3. Circuit D TX (³⁶ J34)	$\pm 1/2$ db	<u>N/A</u> dbm
4. Circuit F TX (⁴⁰ J38)	± 1 db	<u>-13.5</u> dbm
5. Circuit B TX (J29)	$\pm 1/2$ db	<u>-13.0</u> dbm
6. Circuit C TX (³⁷ J32)	$\pm 1/2$ db	<u>-5.0</u> dbm
7. Circuit C TX (³⁷ J32)	$\pm 1/2$ db	<u>-5.0</u> dbm
8. Circuit C TX (³⁴ J32)	$\pm 1/2$ db	<u>N/A</u> dbm
9. 3,400 cps Tone Level Circuit A TX (J 27)	13 db + $1/2$ db Below Test Tone	<u>-13</u> dbm

LRP

DATA SHEET

MAIN LINE ORDER WIRE STATION TEST

STATION 110MASTER TERMINAL CONTROL STATION
(GPA ONLY)TOLERANCEACTUAL

- | | | |
|---|-----------------------------------|----------------------------------|
| 1. OUT Jack of Drop Amp 6-8, A | <u>+ 1/2 db</u> | <u> </u> db m |
| 2. OUT Jack of Drop Amp 6-8, B | <u>+ 1/2 db</u> | <u> </u> dbm |
| 3. 3,400 cps Tone Level
Radio West TX (J2 EQUIP) | 13 db + 1/2 db
Below Test Tone | <u> </u> dbm |

DATE 8 JUNE 63TESTER C. MahlonSUPERVISOR M. (Gibson)QUALITY ASSURANCE B. E. Keno

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

MAIN LINE ORDER WIRE STATION TEST

STATION 1 R

NOTE: 1. All EXPECTED levels for each station are given on either Figure 2 or Figure 3.

2. Place an X in the ACTUAL column when the requested measurement is not applicable at the station under test.

TERMINAL CONTROL STATION	TOLERANCE	ACTUAL
1. Circuit A TX (J27)	$\pm 1/2$ db	<u>-13</u> dbm
2. Circuit B TX (J29)	± 1 db	<u>-13</u> dbm
3. Circuit D TX (J ³⁶ 34)	$\pm 1/2$ db	<u>-5</u> dbm
4. Circuit F TX (J38)	± 1 db	<u>X</u> dbm
5. Circuit B TX (J29)	$\pm 1/2$ db	<u>-13</u> dbm
6. Circuit C TX (J ³⁷ 32)	$\pm 1/2$ db	<u>-5</u> dbm
7. Circuit C TX (J ³⁴ 32)	$\pm 1/2$ db	<u>-5</u> dbm
8. Circuit C TX (J ³⁴ 32)	$\pm 1/2$ db	<u>-5</u> dbm
9. 3,400 cps Tone Level Circuit A TX (J 27)	13 db + 1/2 db Below Test Tone	<u>-26</u> dbm

LRP

DATA SHEET

MAIN LINE ORDER WIRE STATION TEST

STATION _____

TOLERANCEACTUALMASTER TERMINAL CONTROL STATION
(GPA ONLY)

- | | | |
|---|---------------------------------------|----------------|
| 1. OUT Jack of Drop Amp 6-8, A | $\pm 1/2$ db | <u>NA</u> db m |
| 2. OUT Jack of Drop Amp 6-8, B | $\pm 1/2$ db | <u>NA</u> dbm |
| 3. 3,400 cps Tone Level
Radio West TX (J2 EQUIP) | 13 db $\pm 1/2$ db
Below Test Tone | <u>NA</u> dbm |

DATE 12 JUNE, 1963TESTER M. L. LiphartSUPERVISOR R. W. L. L.QUALITY ASSURANCE R. B. Spear

HAP

BR11/131

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DATA SHEET

MAIN LINE ORDER WIRE STATION TEST

STATION IC WEST

NOTE: 1. All EXPECTED levels for each station are given on either Figure 2 or Figure 3.

2. Place an X in the ACTUAL column when the requested measurement is not applicable at the station under test.

TERMINAL CONTROL STATION		<u>TOLERANCE</u>	<u>ACTUAL</u>
1. Circuit A TX (J27)	-13	$\pm 1/2$ db	<u>-13</u> dbm
2. Circuit B TX (J29)	-13	± 1 db	<u>-14</u> dbm
3. Circuit D TX (J ³⁶ ₃₄)	0	$\pm 1/2$ db	<u>0</u> dbm
4. Circuit F TX (J38)	-13.5	± 1 db	<u>-14</u> dbm
5. Circuit B TX (J29)	-13	$\pm 1/2$ db	<u>-13</u> dbm
6. Circuit C TX (J ³⁴ ₃₂)	0	$\pm 1/2$ db	<u>0</u> dbm
7. Circuit C TX (J ³⁴ ₃₂)	0	$\pm 1/2$ db	<u>0</u> dbm
8. Circuit C TX (J ³⁴ ₃₂)	0	$\pm 1/2$ db	<u>0</u> dbm
9. 3,400 cps Tone Level Circuit A TX (J 27)		13 db + $1/2$ db Below Test Tone	<u>-26</u> dbm

DATA SHEET

MAIN LINE ORDER WIRE STATION TEST

STATION IC WESTTOLERANCEACTUALMASTER TERMINAL CONTROL STATION
(GPA ONLY)

- | | | |
|---|-----------------------------------|----------------------------------|
| 1. OUT Jack of Drop Amp 6-8, A | <u>+ 1/2 db</u> | <u> </u> db m |
| 2. OUT Jack of Drop Amp 6-8, B | <u>+ 1/2 db</u> | <u> </u> dbm |
| 3. 3,400 cps Tone Level
Radio West TX (J2 EQUIP) | 13 db + 1/2 db
Below Test Tone | <u> </u> dbm |

DATE 16 JUNE 63TESTER IT DEKARSUPERVISOR F.A. GajardoQUALITY ASSURANCE William R. JettGEEIA Robert D. Segler

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BIG RALLY II PROJECT

DATA SHEET

MAIN LINE ORDER WIRE STATION TEST

STATION IC EAST

NOTE: 1. All EXPECTED levels for each station are given on either Figure 2 or Figure 3.

2. Place an X in the ACTUAL column when the requested measurement is not applicable at the station under test.

TERMINAL CONTROL STATION	TOLERANCE		ACTUAL
1. Circuit A TX (J27)	-13	$\pm 1/2$ db	-13 dbm
2. Circuit B TX (J29)	-13	± 1 db	-14 dbm
3. Circuit D TX (J32 ^{J36})	0	$\pm 1/2$ db	0 dbm
4. Circuit F TX (J38)	-13.5	± 1 db	-14 dbm
5. Circuit B TX (J29)	-13	$\pm 1/2$ db	-13 dbm
6. Circuit C TX (J32 ^{J34})	0	$\pm 1/2$ db	0 dbm
7. Circuit C TX (J32 ^{J34})	0	$\pm 1/2$ db	0 dbm
8. Circuit C TX (J32 ^{J34})	0	$\pm 1/2$ db	0 dbm
9. 3,400 cps Tone Level Circuit A TX (J 27)	13 db $\pm 1/2$ db Below Test Tone		-26 dbm

DATA SHEET

MAIN LINE ORDER WIRE STATION TEST

STATION IC EASTMASTER TERMINAL CONTROL STATION
(GPA ONLY)

	<u>TOLERANCE</u>	<u>ACTUAL</u>
1. OUT Jack of Drop Amp 6-8, A	$\pm 1/2$ db	<u>X</u> db m
2. OUT Jack of Drop Amp 6-8, B	$\pm 1/2$ db	<u>X</u> dbm
3. 3,400 cps Tone Level Radio West TX (J2 EQUIP)	13 db + $1/2$ db Below Test Tone	<u>X</u> dbm

DATE 23 JUNE 63TESTER JED [Signature]SUPERVISOR [Signature]QUALITY ASSURANCE William R. [Signature]GEDIA Robert [Signature]

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DATA SHEET

MAIN LINE ORDER WIRE STATION TEST

STATION 614-1-P

NOTE: 1. All EXPECTED levels for each station are given on either Figure 2 or Figure 3.

2. Place an X in the ACTUAL column when the requested measurement is not applicable at the station under test.

TERMINAL CONTROL STATION	TOLERANCE	ACTUAL
1. Circuit A TX (J27)	$\pm 1/2$ db	<u>N/D - 1C</u> dbm
2. Circuit B TX (J29)	± 1 db	<u> </u> dbm
3. Circuit D TX (^{J-36} J-34)	$\pm 1/2$ db	<u> </u> dbm
4. Circuit F TX (J38)	± 1 db	<u> </u> dbm
5. Circuit B TX (J29)	$\pm 1/2$ db	<u> </u> dbm
6. Circuit C TX (^{J-34} J-32)	$\pm 1/2$ db	<u> </u> dbm
7. Circuit C TX (^{J-34} J-32)	$\pm 1/2$ db	<u> </u> dbm
8. Circuit C TX (^{J-34} J-32)	$\pm 1/2$ db	<u> </u> dbm
9. 3,400 cps Tone Level Circuit A TX (J 27)	13 db + 1/2 db Below Test Tone	<u> </u> dbm

DATA SHEET

MAIN LINE ORDER WIRE STATION TEST

STATION GK-1.P

	<u>TOLERANCE</u>	<u>ACTUAL</u>
MASTER TERMINAL CONTROL STATION (GPA ONLY)		
1. OUT Jack of Drop Amp 6-8, A	$\pm 1/2$ db	_____ db m
2. OUT Jack of Drop Amp 6-8, B	$\pm 1/2$ db	_____ dbm
3. 3,400 cps Tone Level Radio West TX (J2 EQUIP)	13 db $\pm 1/2$ db Below Test Tone	_____ dbm

DATE 27 June 63TESTER R. E. CarterSUPERVISOR Harold E. CarterQUALITY ASSURANCE B. E. Brownat station

Spec

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DATA SHEET

MAIN LINE ORDER WIRE STATION TEST

STATION GK-GA

NOTE: 1. All EXPECTED levels for each station are given on either Figure 2 or Figure 3.

2. Place an X in the ACTUAL column when the requested measurement is not applicable at the station under test.

TERMINAL CONTROL STATION	TOLERANCE	ACTUAL
1. Circuit A TX (J27)	$\pm 1/2$ db	<u>-13.1</u> dbm
2. Circuit B TX (J29)	± 1 db	<u>-13.1</u> dbm
3. Circuit D TX (^{J-36} 131)	$\pm 1/2$ db	<u>-5</u> dbm
4. Circuit F TX (J38)	± 1 db	<u>X</u> dbm
5. Circuit B TX (J29)	$\pm 1/2$ db	<u>-13</u> dbm
6. Circuit C TX (^{J-34} 132)	$\pm 1/2$ db	<u>-5</u> dbm
7. Circuit C TX (^{J-34} 132)	$\pm 1/2$ db	<u>-4.8</u> dbm
8. Circuit C TX (^{J-34} 132)	$\pm 1/2$ db	<u>-4.9</u> dbm
9. 3,400 cps Tone Level Circuit A TX (J 27)	13 db $\pm 1/2$ db Below Test Tone	<u>-26</u> dbm

DATA SHEET

MAIN LINE ORDER WIRE STATION TEST

STATION G. H. G. A.MASTER TERMINAL CONTROL STATION
(GPA ONLY)TOLERANCEACTUAL

1. OUT Jack of Drop Amp 6-8, A
2. OUT Jack of Drop Amp 6-8, B
3. 3,400 cps Tone Level
Radio West TX (J2 EQUIP)

+ 1/2 dbdb m+ 1/2 dbdbm
13 db + 1/2 db
Below Test Tone
dbmDATE 4 July 63TESTER F. S. [Signature]SUPERVISOR [Signature]QUALITY ASSURANCE [Signature]
SRP

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

MAIN LINE ORDER WIRE STATION TEST

STATION GA

NOTE: 1. All EXPECTED levels for each station are given on either Figure 2 or Figure 3.

2. Place an X in the ACTUAL column when the requested measurement is not applicable at the station under test.

TERMINAL CONTROL STATION	TOLERANCE	ACTUAL
1. Circuit A TX (J27)	$\pm 1/2$ db	<u>-13</u> dbm
2. Circuit B TX (J29)	± 1 db	<u>-13</u> dbm
3. Circuit D TX (J27) ^{J-36}	$\pm 1/2$ db	<u>-5</u> dbm
4. Circuit F TX (J38)	± 1 db	<u>XXX</u> dbm
5. Circuit B TX (J29)	$\pm 1/2$ db	<u>-13</u> dbm
6. Circuit C TX (J32) ^{J-34}	$\pm 1/2$ db	<u>-5</u> dbm
7. Circuit C TX (J32) ^{J-34}	$\pm 1/2$ db	<u>-5</u> dbm
8. Circuit C TX (J32) ^{J-34}	$\pm 1/2$ db	<u>-5</u> dbm
9. 3,400 cps Tone Level Circuit A TX (J 27)	13 db $\pm 1/2$ db Below Test Tone	<u>-26</u> dbm

DATA SHEET

MAIN LINE ORDER WIRE STATION TEST

STATION GAMASTER TERMINAL CONTROL STATION
(GPA ONLY)TOLERANCEACTUAL

1. OUT Jack of Drop Amp 6-8, A

+ 1/2 dbXXXXXX db m

2. OUT Jack of Drop Amp 6-8, B

+ 1/2 dbXXXXXX dbm3. 3,400 cps Tone Level
Radio West TX (J2 EQUIP)13 db + 1/2 db
Below Test ToneXXXXXXXX dbmDATE 10 July 1963TESTER Judy. ThibSUPERVISOR Paul H. VanenportQUALITY ASSURANCE Stanley

GEEIA

Robert W. Legler

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

MAIN LINE ORDER WIRE STATION TEST

STATION GPA

NOTE: 1. All EXPECTED levels for each station are given on either Figure 2 or Figure 3.

2. Place an X in the ACTUAL column when the requested measurement is not applicable at the station under test.

TERMINAL CONTROL STATION	TOLERANCE	ACTUAL
1. Circuit A TX (J27)	$\pm 1/2$ db	<u>N/A</u> dbm
2. Circuit B TX (J29)	± 1 db	<u> </u> dbm
3. Circuit D TX (^{J-36} J28)	$\pm 1/2$ db	<u> </u> dbm
4. Circuit F TX (J38)	± 1 db	<u> </u> dbm
5. Circuit B TX (J29)	$\pm 1/2$ db	<u> </u> dbm
6. Circuit C TX (^{J-34} J32)	$\pm 1/2$ db	<u> </u> dbm
7. Circuit C TX (^{J-34} J32)	$\pm 1/2$ db	<u> </u> dbm
8. Circuit C TX (^{J-34} J32)	$\pm 1/2$ db	<u> </u> dbm
9. 3,400 cps Tone Level Circuit A TX (J 27)	13 db $\pm 1/2$ db Below Test Tone	<u> </u> dbm

DATA SHEET

MAIN LINE ORDER WIRE STATION TEST

STATION GPAMASTER TERMINAL CONTROL STATION
(GPA ONLY)

	<u>TOLERANCE</u>	<u>ACTUAL</u>
1. OUT Jack of Drop Amp 6-8, A	$\pm 1/2$ db	<u>4.5</u> db m
2. OUT Jack of Drop Amp 6-8, B	$\pm 1/2$ db	<u>13.5</u> dbm
3. 3,400 cps Tone Level Radio West TX (J2 EQUIP)	13 db \pm 1/2 db Below Test Tone	<u>-33</u> dbm

DATE 4 July 63TESTER Wm G. MaySUPERVISOR J. W. WainwrightQUALITY ASSURANCE W. C. CorioGEEIA Robert D. Lyle

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

MAIN LINE ORDER WIRE LINK TEST

STATION I.D.

- NOTES: 1. All EXPECTED levels for each station are given on either Figure 2 or Figure 3.
2. Place an X in the ACTUAL column when the requested measurement is not applicable at the station under test.

LINK CIRCUIT LEVELS	TOLERANCE	ACTUAL
1. Radio East RX	<u>+ 1 db</u>	<u>- 10</u> dbm
2. Radio West RX	<u>+ 1 db</u>	<u>N/A</u> dbm
3. EXOW	<u>+ 1 db</u>	<u>N/A</u> dbm

OVER-RIDE OPERATION

1. Transmit Circuit
2. Receive Circuit
3. Transmit Circuit (Master Term. Cont. - GPA)
4. Receive Circuit ((Master Term. Cont. - GPA)

ERRATIC & INTERMITTENT
OPERATION.

Initial if Okay _____

DATE 17 JUNE, 1963TESTER H. HolmanSUPERVISOR H. GilmanQUALITY ASSURANCE B. E. Brown

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

MAIN LINE ORDER WIRE LINK TEST

STATION IR-E
IR-W

- NOTES: 1. All EXPECTED levels for each station are given on either Figure 2 or Figure 3.
2. Place an X In the ACTUAL column when the requested measurement is not applicable at the station under test.

LINK CIRCUIT LEVELS	<u>TOLERANCE</u>	<u>ACTUAL</u>
1. Radio East RX	<u>+1 db</u>	<u>± 0</u> dbm
2. Radio West RX	<u>+1 db</u>	<u>± 0</u> dbm
3. EXOW	<u>+1 db</u>	<u>X</u> dbm

OVER-RIDE OPERATION

1. Transmit Circuit
2. Receive Circuit
3. Transmit Circuit (Master Term. Cont. - GPA)
4. Receive Circuit ((Master Term. Cont. - GPA)

Initial if Okay RBSRBSXX

NOTE: MEASUREMENT MADE AT

RX KEY TEL SET JACK.

DATE 16 JUNE, 1963TESTER Martin HughesSUPERVISOR R. W. LoringQUALITY ASSURANCE RBSARP

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

MAIN LINE ORDER WIRE LINK TEST

STATION IC

- NOTES: 1. All EXPECTED levels for each station are given on either Figure 2 or Figure 3.
2. Place an X in the ACTUAL column when the requested measurement is not applicable at the station under test.

LINK CIRCUIT LEVELS	TOLERANCE	ACTUAL
1. Radio East RX	-10 dbm \pm 1 db	<u>-9</u> dbm
2. Radio West RX	-10 dbm \pm 1 db	<u>-9.5</u> dbm
3. EXOW	\pm 1 db	<u> </u> dbm

OVER-RIDE OPERATION

- | | | |
|--|--------------------------|-----------------------------------|
| 1. Transmit Circuit | Unsatisfactory <i>RO</i> | Initial if Okay <u> </u> |
| 2. Receive Circuit | Unsatisfactory <i>RO</i> | <u> </u> |
| 3. Transmit Circuit (Master Term. Cont. - GPA) | | <u> </u> |
| 4. Receive Circuit ((Master Term. Cont. - GPA) | | <u> </u> |

DATE 27 June 63TESTER R. ShadySUPERVISOR J. H. LapinskiQUALITY ASSURANCE William R. NitzGEEIA Robert D. Leyle

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

MAIN LINE ORDER WIRE LINK TEST

STATION GK-1.P

- NOTES: 1. All EXPECTED levels for each station are given on either Figure 2 or Figure 3.
2. Place an X in the ACTUAL column when the requested measurement is not applicable at the station under test.

LINK CIRCUIT LEVELS	<u>TOLERANCE</u>	<u>ACTUAL</u>
1. Radio East RX.	<u>+ 1 db</u>	<u>N/A</u> dbm
2. Radio West RX	<u>+ 1 db</u>	<u>- 9.8</u> dbm
3. EXOW	<u>+ 1 db</u>	<u>N/A</u> dbm

OVER-RIDE OPERATION

1. Transmit Circuit
2. Receive Circuit
3. Transmit Circuit (Master Term. Cont.- GPA)
4. Receive Circuit ((Master Term. Cont. - GPA)

Initial if Okay B. E. B.DATE 27 June 63TESTER B. E. B.SUPERVISOR B. E. B.QUALITY ASSURANCE B. E. B.W. J. B.

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

MAIN LINE ORDER WIRE LINK TEST

STATION GK-GA

- NOTES: 1. All EXPECTED levels for each station are given on either Figure 2 or Figure 3.
2. Place an X in the ACTUAL column when the requested measurement is not applicable at the station under test.

LINK CIRCUIT LEVELS	<u>TOLERANCE</u>	<u>ACTUAL</u>
1. Radio East RX	<u>+ 1 db</u>	<u>10.2</u> dbm
2. Radio West RX	<u>+ 1 db</u>	<u>X</u> dbm
3. EXOW	<u>+ 1 db</u>	<u>X</u> dbm

OVER-RIDE OPERATION

1. Transmit Circuit
2. Receive Circuit
3. Transmit Circuit (Master Term. Cont. - GPA)
4. Receive Circuit (Master Term. Cont. - GPA)

Initial if Okay UNSAT.UNSATN/AN/ADATE 11 July 63TESTER R. E. JonesSUPERVISOR R. E. JonesQUALITY ASSURANCE B. P. BassGEEIA H. P. Bass

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

MAIN LINE ORDER WIRE LINK TEST

STATION GA

- NOTES: 1. All EXPECTED levels for each station are given on either Figure 2 or Figure 3.
2. Place an X in the ACTUAL column when the requested measurement is not applicable at the station under test.

LINK CIRCUIT LEVELS

TOLERANCEACTUAL

1. Radio East RX

+ 1 db-12.2 dbm

Rx 1 Rx2 Rx3 Rx4

2. Radio West RX

+ 1 db-10.3 -9.0 -10.3 -11 dbm

3. EXOW

+ 1 dbN/A dbm

OVER-RIDE OPERATION

1. Transmit Circuit

Initial if Okay INTERMITTENT

2. Receive Circuit

INTERMITTENT

3. Transmit Circuit (Master Term. Cont. - GPA)

XXXXX

4. Receive Circuit (Master Term. Cont. - GPA)

XXXXXDATE 14 July 1963TESTER John H. ThielSUPERVISOR Paul W. HaverportQUALITY ASSURANCE Robert W. Legler

GEEIA

Robert W. Legler

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

MAIN LINE ORDER WIRE LINK TEST

STATION GPA

- NOTES: 1. All EXPECTED levels for each station are given on either Figure 2 or Figure 3.
2. Place an X in the ACTUAL column when the requested measurement is not applicable at the station under test.

LINK CIRCUIT LEVELS	<u>TOLERANCE</u>	<u>ACTUAL</u>
1. Radio East RX	<u>+ 1 db</u>	<u>-20 dbm</u>
2. Radio West RX	<u>+ 1 db</u>	<u>x dbm</u>
3. EXOW	<u>+ 1 db</u>	<u>x dbm</u>

OVER-RIDE OPERATION

1. Transmit Circuit	Initial if Okay <u>See note</u>
2. Receive Circuit	<u>x</u>
3. Transmit Circuit (Master Term. Cont. - GPA)	<u>See note</u>
4. Receive Circuit ((Master Term. Cont. - GPA)	<u>x</u>

Note: Intermittent and unstable

DATE 14 July 63TESTER Vincent QuinnSUPERVISOR J. WenzelQUALITY ASSURANCE M. O'NeilGEEIA J. Felt

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BR11/156

BIG RALLY II PROJECT

DATA SHEET

STATION GPA(GA)GAB

STATION TESTS

EXPECTED

ACTUAL

1. Signal Transmit Level, Jack Pos. 24	(-15 \pm 0.5 dbm)	see note ⁻¹⁵ -14 dbm
2. Signal Transmit Level, Jack Pos. 26	(-15 \pm 0.5 dbm)	⁻¹⁵ -14 dbm
3. Pad Loss, GAB	(-20 \pm 0.5 dbm)	-21 dbm
4. Pad Loss, GTA	(-20 \pm 0.5 dbm)	N/A dbm
5. Pad Loss, GIM	(-20 \pm 0.5 dbm)	N/A dbm
6. Amplifier A Gain Adjust, Pos. 12-6	(-5 \pm 0.5 dbm)	-5 dbm
7. Amplifier B Gain Adjust, Pos. 12-6	(-5 \pm 0.5 dbm)	-5 dbm
8. Amplifier A Gain Adjust, Pos. 12-7	(-5 \pm 0.5 dbm)	-5 dbm
9. Order Wire Receive, GAB	(Lamp 1 ON & Buzzer)	ok-MC Int
10. Order Wire Receive, GTA	(Lamp 2 ON & Buzzer)	N/A Int
11. Order Wire Receive, GIM	(Lamp 3 ON & Buzzer)	N/A Int
12. Order Wire Receive, GPA(GHO)	(Lamp 4 ON & Buzzer)	N/A Int

LINK TESTS

EXPECTED

ACTUAL

1. Receive Level		
GPA to GAB	(-5 \pm 1 dbm)	-4.1 dbm
GPA to GTA	(-5 \pm 1 dbm)	N/A dbm
GPA to GIM	(-5 \pm 1 dbm)	N/A dbm
GPA to GHO	(-5 \pm 1 dbm)	N/A dbm

Note: *OK A. Belmont GEEIA*
 not within specifications.

BRII/156

LINK TESTS

EXPECTED

ACTUAL

2. Signalling

GPA to GAB

(Lamp ON & Buzzer at GAB)

ok-MC Int

GPA to GTA

(Lamp ON & Buzzer at GTA)

N/A Int

GPA to GIM

(Lamp ON & Buzzer at GIM)

N/A Int

GPA to GHO

(Lamp ON & Buzzer, GHO
Shelter)

N/A Int

(Buzzer, GHO LOS Bldg.)

N/A Int

DATE 20 July 63

TESTER Wm. J. Gray

SUPERVISOR [Signature]

QUALITY ASSURANCE [Signature]

GEEIA [Signature]

FEDERAL ELECTRIC CORPORATION

BR11/155

BIG BULLY II PROJECT

DATA SHEET

STATION GAB (GPA AND GEL) ORDER WIRE

STATION TESTS	EXPECTED	ACTUAL
1. Signal Transmit Level	$(-15 \pm 0.5 \text{ dbm})$	<u>-35.0</u> dbm
2. Bridge Transmit Loss, W Mod	$(-20 \pm 0.5 \text{ dbm})$	<u>-20.0</u> dbm
3. Amplifier A Gain Adjust, Pos. 9-3	$(-16 \pm 0.5 \text{ dbm})$	<u>-4.0</u> dbm
TCC-3 Not modified to accept -16 dbm input level		
4. Pad Loss	$(0 \pm 0.5 \text{ dbm})$	<u>N/A</u> dbm
5. Bridge Receive Loss, Spur Mod	$(-20 \pm 0.5 \text{ dbm})$	<u>-20.0</u> dbm
6. Amplifier A Gain Adjust, Pos. 9-4	$(-5 \pm 0.5 \text{ dbm})$	<u>-5.0</u> dbm
7. Bridge Transmit Loss, E Mod	$(-20 \pm 0.5 \text{ dbm})$	<u>-20.0</u> dbm
8. Amplifier B Gain Adjust, Pos. 9-3	$(0 \pm 0.5 \text{ dbm})$	<u>0</u> dbm
9. Order Wire Receive	(Lamp ON & Buzzer)	<u>WJS</u> Int

LINK TESTS	EXPECTED	ACTUAL
1. Receive Level		
GAB to GEL	$(-5 \pm 1 \text{ dbm})$	<u>-3.2</u> dbm
GAB to GPA	$(-5 \pm 1 \text{ dbm})$	<u>-5.0</u> dbm
2. Signalling		
GAB to GEL	(Lamp ON & Buzzer at GEL)	<u>WJS</u> Int
GAB to GPA	(Lamp 1 on & Buzzer at GPA)	<u>WJS</u>

DATE 19 JULY 1963

TESTER

SUPERVISOR

QUALITY ASSURANCE

GEEIA

W. J. Schreiber
Frank J. Skopinski
Don Kendall
Robert D. Lytle 3-26

FEDERAL ELECTRIC CORPORATION

BR11/151

BIG RALLY II PROJECT

DATA SHEET

STATIONS ICC(IC), GEL(GAB), TCO(TKG) AND TES(TKG)

STATION TESTS	EXPECTED	ACTUAL
1. Signal Transmit Level	$(-30 \pm 0.5 \text{ dbm})$	<u>-30</u> dbm
2. Bridge Transmit Loss, W Mod	$(-15 \pm 0.5 \text{ dbm})$	<u>-16</u> dbm
3. Amplifier A Gain Adjust, Pos. 9-3	$(-4 \pm 0.5 \text{ dbm})$	<u>-4</u> dbm
4. Bridge Receive Loss, Spur Mod.	$(-16 \pm 0.5 \text{ dbm})$	<u>-16</u> dbm
5. Amplifier A Gain Adjust, Pos. 9-4	$(-5 \pm 0.5 \text{ dbm})$	<u>-5</u> dbm
6. Bridge Transmit Loss, E Mod	$(-16 \pm 0.5 \text{ dbm})$	<u>-16</u> dbm
7. Amplifier B Gain Adjust, Pos. 9-3	$(-5 \pm 0.5 \text{ dbm})$	<u>-5</u> dbm
8. Order Wire Receive	(Lamp ON & Buzzer)	<u>MC</u> Int

LINK TESTS	EXPECTED	ACTUAL
1. Receive Level		
TCO to TKG	$(-5 \pm 1 \text{ dbm})$	_____ dbm
TES to TKG	$(-5 \pm 1 \text{ dbm})$	_____ dbm
ICC to IC Shelter	$(-5 \pm 1 \text{ dbm})$	_____ dbm
ICC to IC Van	$(-5 \pm 1 \text{ dbm})$	_____ dbm
GEL to GAB	$(-5 \pm 1 \text{ dbm})$	<u>* -3.2</u> dbm

Sheet 1 of 2

S R Pellet
GEEIA

* out of spec

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BRII/151

LINK TESTS

EXPECTED

ACTUAL

2. Signalling

TCO to TKG

(Lamp 1 ON & Buzzer at TKG) _____ Int

TES to TKG

(Lamp 4 ON & Buzzer at TKG) _____ Int

IGC to IC Shelter

(Lamp ON & Buzzer, IC Shelter) _____ Int

IGC to IC Van

(Lamp ON & Buzzer, IC Van) _____ Int

GEL to GAB

(Lamp ON & Buzzer at GAB) OK SRP Int

DATE 21 July 63

TESTER George B Bennett

SUPERVISOR Andrew J Horvath

QUALITY ASSURANCE M. Crif
SRP

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

TECHNICAL CONTROL EQUIPMENT

STATION (Check one) ID ✓, IC _____, GPA-1 _____.

		Expected	Actual
1. Bridge Loss	(Step E)	-8 ± 1 dbm	<u>-7.9</u> dbm
	(Step G)	-8 ± 1 dbm	<u>-7.3</u> dbm
	(Step J)	-8 ± 1 dbm	<u>-7.4</u> dbm
	(Step O)	-8 ± 1 dbm	<u>-7.7</u> dbm
2. Terminating Set Insertion Loss		-5 ± 0.5 dbm	<u>-4.8</u> dbm
3. Pad Loss	(Step E)	-16 dbm ± 0.5 dbm	<u>-16</u> dbm
	(Step K)	-16 dbm ± 0.5 dbm	<u>-16</u> dbm
4. Amplifier Gain	(Step E)	-3 dbm ± 0.5 dbm	<u>-3</u> dbm
	(Step H)	$+7$ dbm ± 0.5 dbm	<u>+7</u> dbm
	(Step M)	$+7$ dbm ± 0.5 dbm	<u>+7</u> dbm
	(Step R)	$+7$ dbm ± 0.5 dbm	<u>+7</u> dbm
5. Transmit Signal Level		0 ± 0.5 dbm	<u>-0.3</u> dbm
6. Tone Oscillator Level		-12 dbm ± 0.5 dbm	<u>-26</u> dbm AT AUX CHANNEL 12 AT EQUIPMENT CIR.
7. Dialing Test			<u>K.N.</u> Initials

DATE 8 JUNE 63TESTER K. NelsonSUPERVISOR R.E. H. H. H.QUALITY ASSURANCE R.E. H. H. H.
S.R.P. 3-29

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

TECHNICAL CONTROL EQUIPMENT

STATION (Check one) ID _____, IC _____, GPA-1 X.

		Expected	Actual
1. Bridge Loss	(Step E)	-8 \pm 1 dbm	<u>-7.5</u> dbm
	(Step G)	-8 \pm 1 dbm	<u>-7.5</u> dbm
	(Step J)	-8 \pm 1 dbm	<u>-7.5</u> dbm
	(Step O)	-8 \pm 1 dbm	<u>-7.5</u> dbm
2. Terminating Set Insertion Loss		-5 \pm 0.5 dbm	<u>-5</u> dbm
3. Pad Loss	(Step E)	-20 -16 dbm \pm 0.5 dbm	<u>-20</u> dbm
	See note		
	(Step K)	-16 dbm \pm 0.5 dbm	<u>-16</u> dbm
4. Amplifier Gain	(Step E)	-3 dbm \pm 0.5 dbm	<u>-3</u> dbm
	(Step H)	+7 dbm \pm 0.5 dbm	<u>+7</u> dbm
	(Step M)	+7 dbm \pm 0.5 dbm	<u>+7</u> dbm
	(Step R)	+7 dbm \pm 0.5 dbm	<u>+7</u> Dbm
5. Transmit Signal Level		0 \pm 0.5 dbm	<u>-0</u> dbm
6. Tone Oscillator Level	See note	-18 -12 dbm \pm 0.5 dbm	<u>-18</u> dbm
7. Dialing Test			<u>MC</u> Initials

Note: Changes made per instructions of
Mr. W. Shoemaker, I.S.E.I. Engineer

DATE 17 JULY 63TESTER W. S. GraySUPERVISOR J. W. WenzelQUALITY ASSURANCE W. C. [Signature]GEEEA [Signature]

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATASHEET
TECHNICAL CONTROL EQUIPMENT

STATION GPA-2 only.

		<u>Expected</u>	<u>Actual</u>
1. Bridge Loss	(Step F)	-8 ± 1 dbm	<u>-8</u> dbm
	(Step J)	-8 ± 1 dbm	<u>-8</u> dbm
	(Step N)	-8 ± 1 dbm	<u>-8</u> dbm
	(Step R)	-8 ± 1 dbm	<u>-8</u> dbm
2. Pad Loss	(Step D)	$-16 \text{ dbm} \pm 0.5 \text{ dbm}$	<u>-16</u> dbm
	(Step F)	$-16 \text{ dbm} \pm 0.5 \text{ dbm}$	<u>-16</u> dbm
	(Step H)	$-16 \text{ dbm} \pm 0.5 \text{ dbm}$	<u>-16</u> dbm
	(Step K)	$-16 \text{ dbm} \pm 0.5 \text{ dbm}$	<u>-16</u> dbm

DATE 17 July 63TESTER Wm S GraySUPERVISOR J. WenzelQUALITY ASSURANCE M. C. J.GEETA S. S. S.

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

TECHNICAL CONTROL EQUIPMENT

STATION (Check one) TIC _____, GAB-1 XXXXXX.

		<u>Expected</u>	<u>Actual</u>
1. Bridge Loss	(Step E)	-8 ± 1 dbm	<u>-8.0</u> dbm
	(Step H)	-8 ± 1 dbm	<u>-8.0</u> dbm
2. Rad-Loss E MOD LOSS		-16 ± 0.5 dbm	<u>-16.0</u> dbm
3. Amplifier Gain	(Step E)	$+7 \pm 0.5$ dbm	<u>+7.0</u> dbm
	(Step G)	-3 ± 0.5 dbm	<u>-3.0</u> dbm
	(Step K)	$\overset{+7}{-8} \pm 0.5$ dbm	<u>+7.0</u> dbm
	(Step M)	-3 ± 0.5 dbm	<u>-3.0</u> dbm
		-26	
4. Tone Oscillator Level	(Step D)	$\overset{-26}{-18} \pm 0.5$ dbm	<u>-26.0</u> dbm
	(Step G)	$\overset{-26}{-18} \pm 0.5$ dbm	<u>-26.0</u> dbm
5. Dialing Operation			<u>WJS</u> Initials

DATE 16 JULY 1963TESTER W. J. SchenkerSUPERVISOR Frank J. ChappinettiQUALITY ASSURANCE John RadloffGEEIA Robert D. Kugel

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

TECHNICAL CONTROL EQUIPMENT

STATION (Check one) IGC _____, GEL X, TI _____, GTA _____,
 GIM _____, GPE _____, GAG _____.

		<u>Expected</u>	<u>Actual</u>
1. Pad Loss	See note	-5 -10 ± 0.5 dbm	<u>-5</u> dbm
2. Receive Level		-16 ± 0.5 dbm	<u>N/A</u> dbm
3. Transmit Signal Level		-4 -14 ± 0.5 dbm	<u>-4</u> dbm
4. Tone Oscillator Level		-16 -26 ± 0.5 dbm	<u>-16</u> dbm
5. Dialing Operation			<u>N/A</u> Initials

Note: Test performed in accordance with
 changes in test procedure made by
 Mr. Detweiler, F.E.C. T.&A Eng.

DATE 21 July 1963

TESTER George D. Bawert

SUPERVISOR Andrew J. Horvath

QUALITY ASSURANCE W. Cairns

GEEEA J. R. Pellet

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

TECHNICAL CONTROL LINK TEST

1. Circuit (Check one) A _____, B XXXX, C _____, D _____.
2. Transmit Station (Check) one : IAV _____, ID _____, IC _____,
 IGC _____, GAB XXXX, GAG _____, GEL _____,
 GHO _____, GIM _____, GPA _____, GPE _____,
 GTA _____, TID _____, TIC _____.
3. Receive Stations (Initial for stations contacted)

Circuit:	A	B	C	D
Code:	Station 52	Station 52	Station 52	Station 52
IAV	_____	GEL <u>WJS</u>	GAB _____	TIC _____
ID	_____	GAB _____	GPA _____	TID _____
IC	_____	GPA <u>WJS</u>	GTA _____	
IGC	_____		GIM _____	
			GHO _____	
			GPE _____	
			GAG _____	

SIGNALING NOT OPERATING CORRECTLY
ON ALL DIALING CODES.

DATE 20 July 1963TESTER W. J. SchwescherSUPERVISOR Frank J. StojinskiQUALITY ASSURANCE Herb BondellGEEIA Robert A. Stupler

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FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

DATA SHEET

TECHNICAL CONTROL LINK TEST

1. Circuit (Check one) A _____, B XXXX, C _____, D _____.
2. Transmit Station (Check) one : IAV _____, ID _____, IC _____,
 IGC _____, GAB _____, GAG _____, GEL XXXX,
 GHO _____, GIM _____, GPA _____, GPE _____,
 GTA _____, TID _____, TIC _____.
3. Receive Stations (Initial for stations contacted)

Circuit:	A	B	C	D
Code:	Station 52	Station 52	Station 52	Station 52
IAV _____,	GEL _____,	GAB _____,	TIC _____,	
ID _____,	GAB <u>GB*</u> _____,	GPA _____,	TID _____,	
IC _____,	GPA <u>GB</u> _____,	GTA _____,		
IGC _____,		GIM _____,		
		GHO _____,		
		GPE _____,		
		GAG _____,		

NOTE. ~~COULD NOT REACH GAB ON 550~~
~~AND ALL STATIONS ON 52~~
Telephone, 09-11-11-11

NOTE. ~~COULD NOT REACH GAB ON 550~~
~~AND ALL STATIONS ON 52~~

*Telephone signalling
 function is not complete.*

** Tech control extension
 only*

DATE 22 July 1963

TESTER George B Barrett

SUPERVISOR Andrew J. Horvath

QUALITY ASSURANCE J. Boycher

W. L. Leland, 605-12

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FEDERAL ELECTRIC CORPORATION

BR 11/81

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TEST

STATION GA LOS

Transmission Path: From Station GA to STATION GPA

EXPECTED

ACTUAL

1. TRANSMITTER "A"

A. TX Klystron Beam Current	35-85MA (1.5-3.6)	<u>2.7</u> MA
B. Power Output	Minimum +28 dbm	<u>+28</u> dbm
C. Transmitter RF Frequency		
1) Assigned Operating Freq.		<u>8.155</u> GC
2) Measured Freq. (AFC ON)	+0.005% of Assigned Freq.	<u>8.154</u> GC
3) ACF PULL-IN, MI Reading (Detune Repeller-Fine Control 5 Div CW)	Minimum 9 35 SECONDS TIME	<u>10</u>
4) AFC PULL-IN, MI Reading (Detune Repeller-Fine Control 5 DIV CCW)	Minimum 9 32 SECONDS TIME	<u>10</u>

2. TRANSMITTER "B"

A. TX Klystron Beam Current	35-85MA (1.5-3.6)	<u>3.0</u> MA
B. Power Output	Minimum +28 dbm	<u>+28.5</u> dbm

FEDERAL ELECTRIC CORPORATION

BR 11/81

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TEST

C. Transmitter RF Frequency	EXPECTED	ACTUAL
1) Assigned Operating Freq.		<u>8.155</u> GC
2) Measured Freq. (AFC ON)	<u>+0.005%</u> of Assigned Freq.	<u>8.15376</u> GC
3) AFC PULL IN, MI Reading (Detune Repeller-Fine Control 5 DIV CW)	Minimum 9	<u>INOPERATIVE</u> —
4) AFC PULL-IN, MI Reading (Detune Repeller-Fine Control 5 DIV. CCW)	Minimum 9	<u>INOPERATIVE</u> —

TRANSMITTER STABILIZES APPROXIMATELY 5 MCS OFF ASSIGNED
FREQUENCY

DATE 6 July 1963TESTER Joel H. ThielSUPERVISOR Paul J. LangfordQUALITY ASSURANCE Stan RandallGEETA Robertas Leifer

FEDERAL ELECTRIC CORPORATION

BR 11/81

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TEST

Transmission Path: From Station GPA to STATION GA

	EXPECTED	ACTUAL
I. TRANSMITTER "A"		
A. TX Klystron Beam Current	35-85MA (1.5-3.6)	<u>2.4</u> MA
B. Power Output	Minimum +28 dbm	<u>29.6</u> dbm
C. Transmitter RF Frequency		
1) Assigned Operating Freq.		<u>8345</u> GC
2) Measured Freq. (AFC ON)	+0.005% of Assigned Freq.	<u>8344.200</u> GC
3) ACF PULL-IN, MI Reading (Detune Repeller-Fine-Control 5 Div CW) Mechanical klystron freq. adjust.	Minimum 9	1:45 secs. <u>10</u>
4) AFC PULL-IN, MI Reading (Detune Repeller-Fine-Control 5 DIV CCW) Mechanical klystron freq. adjust.	Minimum 9	:45 secs. <u>10</u>
2. TRANSMITTER "B"		
A. TX Klystron Beam Current	35-85MA (1.5-3.6)	<u>3.0</u> MA
B. Power Output	Minimum +28 dbm	<u>+28.9</u> dbm

FEDERAL ELECTRIC CORPORATION

BR 11/81

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TEST

C. Transmitter RF Frequency	EXPECTED	ACTUAL
1) Assigned Operating Freq.		<u>8345</u> GC
2) Measured Freq. (AFC ON)	<u>+0.005%</u> of Assigned Freq.	<u>8346.000</u> GC
3) AFC PULL IN, MI Reading (Detune Repeller-Fine Control 5 DIV CW) Mechanical klystron freq. adjust.	Minimum 9 :57 secs.	<u>10</u>
4) AFC PULL-IN, MI Reading (Detune Repeller-Fine Control 5 DIV. CCW) Mechanical klystron freq. adjust.	Minimum 9 :27 secs.	<u>10</u>

DATE 3 July 1963TESTER Vincent QuinnSUPERVISOR J. WenzelQUALITY ASSURANCE Mar. ConifGEEIA Robert D. Legler

FEDERAL ELECTRIC CORPORATION

BR 11/81

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TEST

Transmission Path: From Station GPA to Station GAB

STATION GPA

	EXPECTED	ACTUAL
I. TRANSMITTER "A"		
A. TX Klystron Beam Current	35-85MA (1.5-3.6)	<u>2.7</u> MA
B. Power Output	Minimum +28 dbm	<u>29.7</u> dbm
C. Transmitter RF Frequency		
1) Assigned Operating Freq.		<u>8265</u> GC
2) Measured Freq. (AFC ON)	+0.005% of see note Assigned Freq.	<u>8266.84</u> GC
3) ACF PULL-IN, MI Reading (Detune Repeller-Fine Control 5 Div CW)	Minimum 9 see note	<u>9 in 27 secs</u>
4) AFC PULL-IN, MI Reading (Detune Repeller-Fine Control 5 DIV CCW)	Minimum 9 see note	<u>9 in 70 secs</u>
2. TRANSMITTER "B"		
A. TX Klystron Beam Current	35-85MA (1.5-3.6)	<u>2.5</u> MA
B. Power Output	Minimum +28 dbm	<u>29.6</u> dbm

Notes: do not meet specs.

FEDERAL ELECTRIC CORPORATION

BR 11/81

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TEST

C. Transmitter RF Frequency	EXPECTED	ACTUAL
1) Assigned Operating Freq.		<u>8265</u> GC
2) Measured Freq. (AFC ON)	<u>+0.005%</u> of Assigned Freq.	<u>8265.28</u> GC
3) AFC PULL IN, MI Reading (Detune Repeller-Fine Control 5 DIV CW)	Minimum 9	9 <u>in 9 secs.</u>
4) AFC PULL-IN, MI Reading (Detune Repeller-Fine Control 5 DIV. CCW)	Minimum 9	see note 9 <u>in 55 secs</u>

note: do not meet specs.

DATE 28 July 63TESTER Vincent J QuinnSUPERVISOR J. WeingartQUALITY ASSURANCE M. CrispGEEIA [Signature]

FEDERAL ELECTRIC CORPORATION

BR 11/81

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TEST

STATION GABTransmission Path: From Station GAB to STATION GPA

	EXPECTED	ACTUAL
1. TRANSMITTER "A"		
A. TX Klystron Beam Current	35-85MA (1.5-3.6)	<u>2.7</u> MA
B. Power Output	Minimum +28 dbm	<u>+28</u> dbm
C. Transmitter RF Frequency		
1) Assigned Operating Freq.		<u>8.075</u> GC
2) Measured Freq. (AFC ON)	+0.005% of Assigned Freq.	<u>8.076</u> ⁵¹² GC <i>See revised sheet.</i>
3) ACF PULL-IN, MI Reading (Detune Repeller-Fine Control 5 Div CW)	Minimum 9 28 seconds time required	<u>9</u>
4) AFC PULL-IN, MI Reading (Detune Repeller-Fine Control 5 DIV CCW)	Minimum 9 32 seconds time required	<u>9</u>
2. TRANSMITTER "B"		
A. TX Klystron Beam Current	35-85MA (1.5-3.6)	<u>2.9</u> MA
B. Power Output	Minimum +28 dbm	<u>+29.4</u> dbm

BR/81
REVISED DATA
REF.: DD/250, item 1W

STATION GAB

TRANSMISSION PATH FROM STATION GAB TO STATION GPA

C. TRANSMITTER R.F. FREQUENCY.

1) ASSIGNED FREQUENCY	<u>8.075GC</u>
2) MEASURED FREQ.(AFC ON).	<u>8.07512GC</u>

NOTE: REFERENCE CAVITY AT THIS STATION WAS TUNED PRIOR TO PERFORMING THIS TEST.

Date 30 January 1964

Q.A./ I.S.E.I.

AFCS Site Chief

W. C. [Signature]
W. W. [Signature]

FEDERAL ELECTRIC CORPORATION

BR 11/81

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TEST

C. Transmitter RF Frequency	EXPECTED	ACTUAL
1) Assigned Operating Freq.		<u>8.075</u> GC
2) Measured Freq. (AFC ON)	<u>+0.005%</u> of Assigned Freq.	<u>8.07528</u> GC
3) AFC PULL IN, MI Reading (Detune Repeller-Fine Control 5 DIV CW) 12 seconds time required	Minimum 9	<u>9</u>
4) AFC PULL-IN, MI Reading (Detune Repeller-Fine Control 5 DIV. CCW) 29 seconds time required	Minimum 9	<u>9</u>

DATE 17 JULY 1963TESTER W. D. SchumakerSUPERVISOR Grant J. SkonjinskiQUALITY ASSURANCE Don RandallGEEIA Robert S. Legler

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

BR II '82

DATA SHEET

MW-503A LOS STATION TEST

STATION GA LOSTransmitter Path: From Station GA to Station GPA

	EXPECTED	ACTUAL
1. RECEIVER A		
A. RX Klystron Beam Current	15-32 MA	<u>26</u> MA
B. IF Limiter Current (Meter M201 Reading)	(-19 will not meet requirement) MAX -20	<u>-50 (Pegged)</u>
C. IF AMP Noise Level	-17 + 3 db	<u>-17.5</u> db
D. Receiver 3 db Quieting Sensitivity	MAX -85 dbm	<u>-86.6</u> dbm
E. IF AMP Deviation Sensitivity	+3 to -3 db	<u>-1.6</u> db
2. RECEIVER B		
A. RX Klystron Beam Current	15-32 MA	<u>24</u> MA
B. IF Limiter current (Meter M201 Reading)	(-19 will not meet requirement) MAX -20	<u>-50 (Pegged)</u>
C. IF AMP Noise Level	-17 + 3 db	<u>-15.5</u> db
D. Receiver 3 db Quieting Sensitivity	MAX -85 dbm	<u>-88.6</u> dbm
E. IF AMP Deviation Sensitivity	+3 to -3 db	<u>-1.6</u> db

DATE 7 July 1963TESTER Jul H. ThindSUPERVISOR Paul J. HaysQUALITY ASSURANCE Ken Corbett 4-9

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

BR 11, '82

DATA SHEET

MW-503A LOS STATION TEST

STATION GPATransmitter Path: From Station GPA to Station GA

1. RECEIVER A

	EXPECTED	ACTUAL
A. RX Klystron Beam Current	15-32 MA	<u>32</u> MA
B. IF Limiter Current (Meter M201 Reading)	(-19 will not meet requirement) MAX -20	<u>Pegged</u>
C. IF AMP Noise Level	-17 \pm 3 db	<u>18.5</u> db
D. Receiver 3 db Quieting Sensitivity	MAX -85 dbm	<u>86.5</u> dbm
E. IF AMP Deviation Sensitivity	+3 to -3 db	<u>2.8</u> db

2. RECEIVER B

A. RX Klystron Beam Current	15-32 MA	<u>22</u> MA
B. IF Limiter current (Meter M201 Reading)	(-19 will not meet requirement) MAX -20	<u>Pegged</u>
C. IF AMP Noise Level	-17 \pm 3 db	<u>18</u> db
D. Receiver 3 db Quieting Sensitivity	MAX -85 dbm	<u>85</u> dbm
E. IF AMP Deviation Sensitivity	+3 to -3 db	<u>2.6</u> db

DATE 3 July 63TESTER Tracy QuinnSUPERVISOR J. KingQUALITY ASSURANCE Marie Cr.

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

BR 11/82

DATA SHEET

MW-503A LOS STATION TEST

STATION

GPA

Transmitter Path:

From Station

GPA

to Station

GAB

	EXPECTED	ACTUAL
1. RECEIVER A		
A. RX Klystron Beam Current	15-32 MA	<u>21.5</u> MA
B. IF Limiter Current (Meter M201 Reading)	(-19 will not meet requirement) MAX -20	<u>Off scale</u>
C. IF AMP Noise Level	-17 \pm 3 db	<u>-17.5</u> db
D. Receiver 3 db Quieting Sensitivity	MAX -85 dbm	<u>-85</u> dbm
E. IF AMP Deviation Sensitivity	+3 to -3 db	<u>-2.6</u> db
2. RECEIVER B		
A. RX Klystron Beam Current	15-32 MA	<u>26</u> MA
B. IF Limiter current (Meter M201 Reading)	(-19 will not meet requirement), MAX -20	<u>-40</u>
C. IF AMP Noise Level	-17 \pm 3 db	<u>-18.2</u> db
D. Receiver 3 db Quieting Sensitivity	MAX -85 dbm	<u>-85</u> dbm
E. IF AMP Deviation Sensitivity	+3 to -3 db	<u>-2.4</u> db

DATE 18 July 63

TESTER

Vincent Quinn

SUPERVISOR

J. Wenzel

QUALITY ASSURANCE

M. Enry

Sheet 1 of 1

GEEIA

S. F. Smith

4-11

FEDERAL ELECTRIC CORPORATION

BIG RALLY II PROJECT

BR 11, '82

DATA SHEET

MW-503A LOS STATION TEST

STATION GABTransmitter Path: From Station GAB to Station GPA

	EXPECTED	ACTUAL
I. RECEIVER A		
A. RX Klystron Beam Current	15-32 MA	<u>29.0</u> MA
B. IF Limiter Current (Meter M20I Reading)	(-19 will not meet requirement) MAX -20	<u>-50 (Pegged)</u>
C. IF AMP Noise Level	-17 \pm 3 db	<u>-20.0</u> db
D. Receiver 3 db Quieting Sensitivity	MAX -85 dbm	<u>-88.5</u> dbm
E. IF AMP Deviation Sensitivity	+3 to -3 db	<u>-2.3</u> db
2. RECEIVER B		
A. RX Klystron Beam Current	15-32 MA	<u>23.0</u> MA
B. IF Limiter current (Meter M20I Reading)	(-19 will not meet requirement) MAX -20	<u>-50 (Pegged)</u>
C. IF AMP Noise Level	-17 \pm 3 db	<u>-19.8</u> db
D. Receiver 3 db Quieting Sensitivity	MAX -85 dbm	<u>-85.2</u> dbm
E. IF AMP Deviation Sensitivity	+3 to -3 db	<u>-2.8</u> db

DATE 16 JULY 1963TESTER W. J. SchreiberSUPERVISOR Frank J. SkopinskiQUALITY ASSURANCE Don RandallGEEIA Robert A. Taylor

FEDERAL ELECTRIC CORPORATION

BR 11/83

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TESTS

	STATION	GA	LOS
Transmission Patch: From Station <u>GA</u> to STATION <u>GPA</u>			
	EXPECTED	ACTUAL	
1. <u>HOT STANDBY CONFIGURATION</u>			
A. VSWR Measurement at TX Frequency	1.4:1	_____ :1	
B. VSWR Measurement at RX Frequency	1.4:1	_____ :1	
2. <u>FREQUENCY DIVERSITY CONFIGURATION</u>			
A. VSWR Measurement at TX-A Frequency	1.4:1	_____ :1	
B. VSWR Measurement at TX-B Frequency	1.4:1	_____ :1	
C. VSWR Measurement at RX-A Frequency	1.4:1	_____ :1	
D. VSWR Measurement at RX-B Frequency	1.4:1	_____ :1	
3. <u>SPACE DIVERSITY CONFIGURATION</u>			
A. Waveguide Run #1			
1) VSWR Measurement at TX Frequency	1.4:1	<u>1.14</u> :1	
2) VSWR Measurement at RX Frequency	1.4:1	<u>1.187</u> :1	
3. Waveguide Run #2			
1) VSWR Measurement at TX Frequency	1.4:1	<u>1.18</u> :1	
2) VSWR Measurement at RX Frequency	1.4:1	<u>1.14</u> :1	

SEE ATTACHED SHEET FOR VSWR MEASUREMENTS AT ADDITIONAL FREQUENCIES.

DATE 7 July 1963TESTER John W. ThibaultSUPERVISOR Paul J. MacIntyreQUALITY ASSURANCE Stanford

BIG RAILLEY II PROJECT

DATA SHEET

MW-503A LOS STATION TESTS

STATION GATransmission path: From Station GA to Station GPA

	EXPECTED	ACTUAL
1. <u>SPACE DIVERSITY CONFIGURATION</u>		

A. Waveguide Run #1 "A"

1) VSWR Measurement at TX Frequency, plus & minus 500 KCS
and plus & minus 1 MC

a) 8156 MCS	1.4:1	1.07:1
b) 8155.5 MCS	1.4:1	1.11:1
c) 8155 MCS	1.4:1	1.14:1
d) 8154.5 MCS	1.4:1	1.09:1
e) 8154 MCS	1.4:1	1.09:1

2) VSWR Measurement at RX Frequency, plus & minus 500 KCS
and plus & minus 1 MC

a) 8346 MCS	1.4:1	1.19:1
b) 8345.5 MCS	1.4:1	1.14:1
c) 8345 MCS	1.4:1	1.17:1
d) 8344.5 MCS	1.4:1	1.12:1
e) 8344 MCS	1.4:1	1.11:1

B. Waveguide Run #2 "B"

1) VSWR Measurement at TX Frequency plus & minus 500 KCS
and plus & minus 1 MC

a) 8156 MCS	1.4:1	1.15:1
b) 8155.5 MCS	1.4:1	1.15:1
c) 8155 MCS	1.4:1	1.18:1
d) 8154.5 MCS	1.4:1	1.17:1
e) 8154 MCS	1.4:1	1.16:1

2) VSWR Measurement at RX Frequency plus & minus 500 KCS
and plus & minus 1 MC

a) 8346 MCS	1.4:1	1.15:1
b) 8345.5 MCS	1.4:1	1.14:1
c) 8345 MCS	1.4:1	1.14:1
d) 8344.5 MCS	1.4:1	1.14:1
e) 8344 MCS	1.4:1	1.14:1

DATE 9 July 1963TESTER John. ThielSUPERVISOR Paul J. VanevQUALITY ASSURANCE Steve RindellGEEIA Robert D. Legler

FEDERAL ELECTRIC CORPORATION

BR 11/83

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TESTS

Transmission Patch: From Station <u>GPA</u> to Station <u>GA</u>		STATION <u>GPA</u>		STATION <u>GA</u>
		EXPECTED		ACTUAL
1.	<u>HOT STANDBY CONFIGURATION</u>			
A.	VSWR Measurement at TX Frequency	1.4:1		<u>N/A</u> :1
B.	VSWR Measurement at RX Frequency	1.4:1		<u>N/A</u> :1
2.	<u>FREQUENCY DIVERSITY CONFIGURATION</u>			
A.	VSWR Measurement at TX-A Frequency	1.4:1		<u>N/A</u> :1
B.	VSWR Measurement at TX-B Frequency	1.4:1		<u>N/A</u> :1
C.	VSWR Measurement at RX-A Frequency	1.4:1		<u>N/A</u> :1
D.	VSWR Measurement at RX-B Frequency	1.4:1		<u>N/A</u> :1
3.	<u>SPACE DIVERSITY CONFIGURATION</u>			
A.	Waveguide Run #1			
	1) VSWR Measurement at TX Frequency	1.4:1		<u>1.12</u> :1
	2) VSWR Measurement at RX Frequency	1.4:1		<u>1.05</u> :1
B.	Waveguide Run #2			
	1) VSWR Measurement at TX Frequency	1.4:1		<u>1.08</u> :1
	2) VSWR Measurement at RX Frequency	1.4:1		<u>1.17</u> :1

DATE 4 July 63See sheet 2 for VSWR measurements
at TX & RX for different frequenciesTESTER J. W. ThielSUPERVISOR J. MenigoffQUALITY ASSURANCE W. Cris

DATA SHEET
MW-503A LOS STATION TESTS

Addendum to BR II/83
Sheet 2 of 2

STATION: GPA

Transmission Path: From GPA Station to GA Station

RECEIVER FREQUENCY - 8155 Mc

Frequency	%	"A" VSWR	%	"B" VSWR
8156 Mc	4.9	1.10	5.9	1.12
8155.5 Mc	2.4	1.05	7.3	1.16
8155 Mc	2.2	1.05	7.7	1.17
8154.5 Mc	2.7	1.06	8.0	1.18
8154 Mc	1.8	1.04	8.6	1.19
8153.5	-	-	8.9	1.20

TRANSMITTER FREQUENCY - 8345 Mc

Frequency	%	"A" VSWR	%	"B" VSWR
8346 Mc	1.9	1.04	1.7	1.04
8345.5 Mc	3.5	1.08	8.5	1.19
8345 Mc	5.9	1.12	3.4	1.08
8344.5 Mc	6.5	1.14	3.4	1.08
8344 Mc	4.5	1.10	1.8	1.04

DATE 4 July 63
 TESTER Vincent Quinn
 SITE SUPER. J. Wenzel
 QA Maris Cris
 GEEIA Robert D. Legler

FEDERAL ELECTRIC CORPORATION

BR 11/83

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TESTS

		STATION	GPA
Transmission Patch: From Station		GPA	to STATION GAB
		EXPECTED	ACTUAL
1. <u>HOT STANDBY CONFIGURATION</u>			
A. VSWR Measurement at TX Frequency	1.4:1	<u>N/A</u> :1	
B. VSWR Measurement at RX Frequency	1.4:1	<u>N/A</u> :1	
2. <u>FREQUENCY DIVERSITY CONFIGURATION</u>			
A. VSWR Measurement at TX-A Frequency	1.4:1	<u>N/A</u> :1	
B. VSWR Measurement at TX-B Frequency	1.4:1	<u>N/A</u> :1	
C. VSWR Measurement at RX-A Frequency	1.4:1	<u>N/A</u> :1	
D. VSWR Measurement at RX-B Frequency	1.4:1	<u>N/A</u> :1	
3. <u>SPACE DIVERSITY CONFIGURATION</u>			
A. Waveguide Run #1			
1) VSWR Measurement at TX Frequency	1.4:1	<u>1.08</u> :1	
2) VSWR Measurement at RX Frequency	1.4:1	<u>1.10</u> :1	
B. Waveguide Run #2			
1) VSWR Measurement at TX Frequency	1.4:1	<u>1.13</u> :1	
2) VSWR Measurement at RX Frequency	1.4:1	<u>1.20</u> :1	

DATE 5 July 63TESTER Vernon QuinnSUPERVISOR J. W. WenzelQUALITY ASSURANCE W. C. Crif

DATA SHEET Addendum to BR II/83
MW-503A LOS STATION TESTS Sheet 1 of 2

STATION: GPA

Transmission Path: From GPA Station to GAB Station

RECEIVER FREQUENCY

	Rx %	A VSWR	Rx %	B VSWR
8075 Mc				
8074 Mc (201.850 Mc)	2.6	1.05	6.0	1.13
8074.5 Mc (201.863 Mc)	4.2	1.09	7.2	1.16
8075 Mc (201.875 Mc)	4.4	1.10	9.2	1.20
8075.5 Mc (201.888 Mc)	3	1.06	3.2	1.07
8076 (201.9 Mc)	4.3	1.10	9.3	1.20

TRANSMITTER FREQUENCY

	Tx %	A VSWR	Tx %	B VSWR
8265 Mc				
8264 Mc (206.600 Mc)	2.4	1.05	3.7	1.08
8264.5 Mc (206.612 Mc)	1.5	1.03	3.2	1.07
8265 Mc (206.625 Mc)	3.8	1.08	6.0	1.13
8265.5 Mc (206.638 Mc)	3.4	1.08	5.8	1.12
8266 Mc (206.650 Mc)	4.2	1.09	7.2	1.16

DATE 7 July 63

TESTER Vincent Quinn

SITE SUPER. W. W. W. W.

QA Mark. Enry

GEEIA Robert D. Legler

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FEDERAL ELECTRIC CORPORATION

BR 11/83

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TESTS

	STATION <u>GAB</u>	
Transmission Patch: From Station <u>GAB</u>	to STATION <u>GPA</u>	
	EXPECTED	ACTUAL
1. <u>HOT STANDBY CONFIGURATION</u>		
A. VSWR Measurement at TX Frequency	1.4:1	_____ :1
B. VSWR Measurement at RX Frequency	1.4:1	_____ :1
2. <u>FREQUENCY DIVERSITY CONFIGURATION</u>		
A. VSWR Measurement at TX-A Frequency	1.4:1	_____ :1
B. VSWR Measurement at TX-B Frequency	1.4:1	_____ :1
C. VSWR Measurement at RX-A Frequency	1.4:1	_____ :1
D. VSWR Measurement at RX-B Frequency	1.4:1	_____ :1
3. <u>SPACE DIVERSITY CONFIGURATION</u>		
A. Waveguide Run #1		
1) VSWR Measurement at TX Frequency	1.4:1	<u>1.14</u> :1
2) VSWR Measurement at RX Frequency	1.4:1	<u>1.13</u> :1
B. Waveguide Run #2		
1) VSWR Measurement at TX Frequency	1.4:1	<u>1.07</u> :1
2) VSWR Measurement at RX Frequency	1.4:1	<u>1.15</u> :1

DATE 16 JULY 1963TESTER W. B. SchreiberSUPERVISOR Frank J. SkopinskiQUALITY ASSURANCE Don Paul

FEDERAL ELECTRIC CORPORATION

BR11/83 (Supplement)

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TESTS

STATION GAB

Transmission Path: From Station GAB to Station GPA
 EXPECTED ACTUAL

L. SPACE DIVERSITY CONFIGURATION

A. Waveguide Run #1 "A"

- 1) VSWR Measurement at TX Frequency, Plus & Minus 500 KCS
 and Plus & Minus 1 MC

a) 8076 MCS	1.4:1	1.11:1
b) 8075.5 MCS	1.4:1	1.14:1
c) 8075 MCS	1.4:1	1.14:1
d) 8074.5 MCS	1.4:1	1.15:1
e) 8074 MCS	1.4:1	1.11:1

- 2) VSWR Measure at RX Frequency, Plus & Minus 500 KCS
 and Plus & Minus 1 MC

a) 8266 MCS	1.4:1	1.07:1
b) 8265.5 MCS	1.4:1	1.09:1
c) 8265 MCS	1.4:1	1.13:1
d) 8264.5 MCS	1.4:1	1.05:1
e) 8264 MCS	1.4:1	1.13:1

B. Waveguide Run # 2 "B"

- 1) VSWR Measurement at TX Frequency Plus & Minus 500 KCS
 and Plus & Minus 1 MC

a) 8076 MCS	1.4:1	1.07:1
b) 8075.5 MCS	1.4:1	1.09:1
c) 8075 MCS	1.4:1	1.07:1
d) 8074.5 MCS	1.4:1	1.07:1
e) 8074 MCS	1.4:1	1.09:1

- 2) VSWR Measurement at RX Frequency Plus & Minus 500 KCS
 and Plus & Minus 1 MC

a) 8266	1.4:1	1.11:1
b) 8265.5 MCS	1.4:1	1.11:1
c) 8265 MCS	1.4:1	1.15:1
d) 8264.5 MCS	1.4:1	1.15:1
e) 8264 MCS	1.4:1	1.09:1

DATE 16 July 1963
 QUALITY ASSURANCE [Signature] TESTER [Signature] 4-20
 GEEIA [Signature] SUPERVISOR [Signature]

FEDERAL ELECTRIC CORPORATION

BR 11/84

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TESTS

STATION GA LOSTransmission Path: From Station GA to STATION GPA

REQUIREMENT

INITIAL IF OK

"P" Rack"N" Rack(See Note 1 on Sheet 3 of this
data sheet.)1. "A" POWER FAILURE

A. Patch Panel Equip Alarm Lights

JHT

B. External Alarms Energized

JHT

C. "A" Diversity Path Alarm Light

JHTD. "A" Power Supply Alarm Lamp Lights
(where applicable)JHTJHT

E. Audible Alarm

F. Hot-Standby & Space Diversity The "A"

JHTFault and "B" inservice lamps on the
SW/O Control Units Lit2. "B" POWER FAILURE

A. Patch Panel Equip Alarm Lights

JHT

B. External Alarms Energized

JHT

C. "B" Diversity Alarms Energized

JHTD. "B" Power Supply Alarm Lamp Lights
(where applicable)JHT

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BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TESTS

E. Audible Alarm	JHT	
F. Hot-Standby & Space Diversity. The "B" Fault & "A" In-Service Lamps on the SW/O Control Unit Lit	JHT	
3. <u>"A" MODULATION ALARM</u>		
A. "A" AFC Pilot Sensor Alarm	JHT	
B. Patch Panel Equip Alm Lights	JHT	
C. External Alarms Energized	JHT	
D. Audible Alarm	JHT	
E. Hot-Standby & Space Diversity. The "A" Fault & "B" In-Service Lamps on the SW/O Control Unit (J1-J2) Lit	JHT	
4. <u>"B" MODULATION ALARM</u>		
A. "B" AFC Pilot Sensor Alarm Lamp Lights	JHT	
B. Patch Panel Equip Alm Lights	JHT	
C. External Alarms Energized	JHT	
D. Audible Alarm	JHT	
E. Hot-Standby & Space Diversity. The "B" Fault and "A" In-Service Lamps on the SW/O Control Unit (J1-J2) Lit	JHT	
5. <u>"A" POWER ALARM</u>		
A. "A" AFC Meter Pulses	JHT	
B. Patch Panel Equip Alm Lights	JHT	
C. External Alarms Energized	JHT	

BIG RALLY II PROJECT.

DATA SHEET

MW-503A LOS STATION TESTS

D. Audible Alarm

JHTE. Hot-Standby & Space Diversity. The "A"
Fault & "B" In-Service Lamps on the SW/O
Control Unit (J1-J2) LitJHT6. "B" POWER ALARM

A. "B" AFC Meter Pulses

JHT

B. Patch Panel Equip Alm Lights

JHT

C. External Alarms Energized

JHT

D. Audible Alarm

JHTE. Hot-Standby & Space Diversity. The "B"
Fault & "A" In-Service Lamps on the SW/O
Control Unit (J1-J2) LitJHTNOTES

1. Enter NA in the "Check IF OK" Column when the test is not applicable.
2. The "External Alarms Energized" Requirements applies to systems containing Fault Alarm Equipment.
3. A Failure Simulation Test should light only the rack alarm in the rack containing the equipment being tested.
4. "P" Rack is a powered rack, while a "N" Rack is a non-powered rack, receiving its power from the "P" rack.

DATE 5 July 1963TESTER J. W. ThielSUPERVISOR Paul J. CunninghamQUALITY ASSURANCE Don Randall

FEDERAL ELECTRIC CORPORATION

BR 11/84

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TESTS

STATION GPATransmission Path: From Station GPA to STATION GA

REQUIREMENT

INITIAL IF OK

"P" Rack "N" Rack
 (See Note 1 on Sheet 3 of this
 data sheet.)

1. "A" POWER FAILURE

A. Patch Panel Equip Alarm Lights	<u>V.Q. \checkmark</u>	<u>N/A</u>
B. External Alarms Energized	<u>V.Q. \checkmark</u>	<u>N/A/</u>
C. "A" Diversity Path Alarm Light	<u>V.Q. \checkmark</u>	<u>N/A</u>
D. "A" Power Supply Alarm Lamp Lights (where applicable)	<u>V.Q. \checkmark</u>	<u>N/A</u>
E. Audible Alarm	<u>V.Q. \checkmark</u>	<u>N/A/</u>
F. Hot-Standby & Space Diversity The "A"	<u>V.Q. \checkmark</u>	<u>N/A</u>

Fault and "B" inservice lamps on the
 SW/O Control Units Lit

2. "B" POWER FAILURE

A. Patch Panel Equip Alarm Lights	<u>V.Q. \checkmark</u>	<u>N/A</u>
B. External Alarms Energized	<u>V.Q. \checkmark</u>	<u>N/A</u>
C. "B" Diversity Alarms Energized	<u>V.Q. \checkmark</u>	<u>N/A</u>
D. "B" Power Supply Alarm Lamp Lights (where applicable)	<u>V.Q. \checkmark</u>	<u>N/A</u>

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TESTS

E. Audible Alarm

V.Q. ✓N/AF. Hot-Standby & Space Diversity. The "B"
Fault & "A" In-Service Lamps on the SW/O
Control Unit LitV.Q. ✓N/A3. "A" MODULATION ALARM

A. "A" AFC Pilot Sensor Alarm

V.Q. ✓N/A

B. Patch Panel Equip Alm Lights

V.Q. ✓N/A

C. External Alarms Energized

V.Q. ✓N/A

D. Audible Alarm

V.Q. ✓N/AE. Hot-Standby & Space Diversity. The "A"
Fault & "B" In-Service Lamps on the SW/O
Control Unit (J1-J2) LitV.Q. ✓N/A4. "B" MODULATION ALARM

A. "B" AFC Pilot Sensor Alarm Lamp Lights

V.Q. ✓N/A

B. Patch Panel Equip Alm Lights

V.Q. ✓N/A

C. External Alarms Energized

V.Q. ✓N/A

D. Audible Alarm

V.Q. ✓N/AE. Hot-Standby & Space Diversity. The "B"
Fault and "A" In-Service Lamps on the
SW/O Control Unit (J1-J2) LitV.Q. ✓N/A5. "A" POWER ALARM

A. "A" AFC Meter Pulses

V.Q. ✓N/A

B. Patch Panel Equip Alm Lights

V.Q. ✓N/A

C. External Alarms Energized

V.Q. ✓N/A

FEDERAL ELECTRIC CORPORATION

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BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TESTS

D. Audible Alarm

V.Q. ✓N/AE. Hot-Standby & Space Diversity. The "A"
Fault & "B" In-Service Lamps on the SW/O
Control Unit (J1-J2) LitV.Q. ✓N/A6. "B" POWER ALARM

A. "B" AFC Meter Pulses

V.Q. ✓N/A

B. Patch Panel Equip Alm Lights

V.Q. ✓N/A

C. External Alarms Energized

V.Q. ✓N/A

D. Audible Alarm

V.Q. ✓N/AE. Hot-Standby & Space Diversity. The "B"
Fault & "A" In-Service Lamps on the SW/O
Control Unit (J1-J2) LitV.Q. ✓N/ANOTES

1. Enter NA in the "Check IF OK" Column when the test is not applicable.
2. The "External Alarms Energized" Requirements applies to systems containing Fault Alarm Equipment.
3. A Failure Simulation Test should light only the rack alarm in the rack containing the equipment being tested.
4. "P" Rack is a powered rack, while a "N" Rack is a non-powered rack, receiving its power from the "P" rack.

DATE 3 July 63TESTER Vincent QuinnSUPERVISOR J. RemingtonQUALITY ASSURANCE Marie Con

FEDERAL ELECTRIC CORPORATION

BR 11/84

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TESTS

STATION GPATransmission Path: From Station GPA to STATION GAB

REQUIREMENT

INITIAL IF OK

"P" Rack
(See Note 1 on Sheet 3 of this
data sheet.)

"N" Rack

1. "A" POWER FAILURE

- A. Patch Panel Equip Alarm Lights
- B. External Alarms Energized
- C. "A" Diversity Path Alarm Light
- D. "A" Power Supply Alarm Lamp Lights
(where applicable)
- E. Audible Alarm
- F. Hot-Standby & Space Diversity The "A"

MC <i>me</i>	N/A
MC <i>me</i>	" "
MC <i>me</i>	" "
MC <i>me</i>	" "
MC <i>me</i>	" "
MC <i>me</i>	" "
MC <i>me</i>	" "

Fault and "B" inservice lamps on the
SW/O Control Units Lit

2. "B" POWER FAILURE

- A. Patch Panel Equip Alarm Lights
- B. External Alarms Energized
- C. "B" Diversity Alarms Energized
- D. "B" Power Supply Alarm Lamp Lights
(where applicable)

MC <i>me</i>	N/A
MC <i>me</i>	" "
MC <i>me</i>	" "
MC <i>me</i>	SS

BIG RALLY II PROJECT

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MW-503A LOS STATION TESTS

E. Audible Alarm	<u>MC we</u>	<u>N/A</u>
F. Hot-Standby & Space Diversity. The "B" Fault & "A" In-Service Lamps on the SW/O Control Unit Lit	<u>MC we</u>	<u>" "</u>
3. <u>"A" MODULATION ALARM</u>		
A. "A" AFC Pilot Sensor Alarm	<u>MC we</u>	<u>N/A</u>
B. Patch Panel Equip Alm Lights	<u>MC we</u>	
C. External Alarms Energized	<u>MC we</u>	
D. Audible Alarm	<u>MC we</u>	
E. Hot-Standby & Space Diversity. The "A" Fault & "B" In-Service Lamps on the SW/O Control Unit (J1-J2) Lit	<u>MC we</u>	
4. <u>"B" MODULATION ALARM</u>		
A. "B" AFC Pilot Sensor Alarm Lamp Lights	<u>MC we</u>	
B. Patch Panel Equip Alm Lights	<u>MC we</u>	
C. External Alarms Energized	<u>MC we</u>	
D. Audible Alarm	<u>MC we</u>	
E. Hot-Standby & Space Diversity. The "B" Fault and "A" In-Service Lamps on the SW/O Control Unit (J1-J2) Lit	<u>MC we</u>	
5. <u>"A" POWER ALARM</u>		
A. "A" AFC Meter Pulses	<u>MC we</u>	
B. Patch Panel Equip Alm Lights	<u>MC we</u>	
C. External Alarms Energized	<u>MC we</u>	

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DATA SHEET

MW-503A LOS STATION TESTS

D. Audible Alarm	MC <u>me</u>	<u>N/A</u>
E. Hot-Standby & Space Diversity. The "A" Fault & "B" In-Service Lamps on the SW/O Control Unit (J1-J2) Lit	MC <u>me</u>	<u>OK</u>
6. <u>"B" POWER ALARM</u>		
A. "B" AFC Meter Pulses	MC <u>me</u>	
B. Patch Panel Equip Alm Lights	MC <u>me</u>	
C. External Alarms Energized	MC <u>me</u>	
D. Audible Alarm	MC <u>me</u>	
E. Hot-Standby & Space Diversity. The "B" Fault & "A" In-Service Lamps on the SW/O Control Unit (J1-J2) Lit	MC <u>me</u>	

NOTES

1. Enter NA in the "Check IF OK" Column when the test is not applicable.
2. The "External Alarms Energized" Requirements applies to systems containing Fault Alarm Equipment.
3. A Failure Simulation Test should light only the rack alarm in the rack containing the equipment being tested.
4. "P" Rack is a powered rack, while a "N" Rack is a non-powered rack, receiving its power from the "P" rack.

DATE 17 July 63TESTER Vincent QuinnSUPERVISOR J. W. WenzelQUALITY ASSURANCE W. CrispGEEIA Self

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DATA SHEET

MW-503A LOS STATION TESTS

STATION GABTransmission Path: From Station GAB to STATION GPA

REQUIREMENT

INITIAL IF OK

"P" Rack
(See Note 1 on Sheet 3 of this
data sheet.)

"N" Rack

1. "A" POWER FAILURE

A. Patch Panel Equip Alarm Lights

WJS

B. External Alarms Energized

WJS

C. "A" Diversity Path Alarm Light

WJSD. "A" Power Supply Alarm Lamp Lights
(where applicable)WJS

E. Audible Alarm

WJS

F. Hot-Standby & Space Diversity The "A"

WJSFault and "B" inservice lamps on the
SW/O Control Units Lit

G. 308 KC PILOT OSC. ALARM LIGHT

WJS2. "B" POWER FAILURE

A. Patch Panel Equip Alarm Lights

WJS

B. External Alarms Energized

WJS

C. "B" Diversity Alarms Energized

WJSD. "B" Power Supply Alarm Lamp Lights
(where applicable)WJS

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS STATION TESTS

E. Audible Alarm	WJS	
F. Hot-Standby & Space Diversity. The "B" Fault & "A" In-Service Lamps on the SW/O Control Unit Lit	WJS	
G. 308 KC PILOT OSC. ALARM LIGHT	WJS	
3. <u>"A" MODULATION ALARM</u>		
A. "A" AFC Pilot Sensor Alarm	WJS	
B. Patch Panel Equip Alm Lights	WJS	
C. External Alarms Energized	WJS	
D. Audible Alarm	WJS	
E. Hot-Standby & Space Diversity. The "A" Fault & "B" In-Service Lamps on the SW/O Control Unit (J1-J2) Lit	WJS	
4. <u>"B" MODULATION ALARM</u>		
A. "B" AFC Pilot Sensor Alarm Lamp Lights	WJS	
B. Patch Panel Equip Alm Lights	WJS	
C. External Alarms Energized	WJS	
D. Audible Alarm	WJS	
E. Hot-Standby & Space Diversity. The "B" Fault and "A" In-Service Lamps on the SW/O Control Unit (J1-J2) Lit	WJS	
5. <u>"A" POWER ALARM</u>		
A. "A" AFC Meter Pulses	WJS	
B. Patch Panel Equip Alm Lights	WJS	
C. External Alarms Energized	WJS	

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DATA SHEET

MW-503A LOS STATION TESTS

D. Audible Alarm	WJS	
E. Hot-Standby & Space Diversity. The "A" Fault & "B" In-Service Lamps on the SW/O Control Unit (J1-J2) Lit	WJS	
6. <u>"B" POWER ALARM</u>		
A. "B" AFC Meter Pulses	WJS	
B. Patch Panel Equip Alm Lights	WJS	
C. External Alarms Energized	WJS	
D. Audible Alarm	WJS	
E. Hot-Standby & Space Diversity. The "B" Fault & "A" In-Service Lamps on the SW/O Control Unit (J1-J2) Lit	WJS	

NOTES

1. Enter NA in the "Check IF OK" Column when the test is not applicable.
2. The "External Alarms Energized" Requirements applies to systems containing Fault Alarm Equipment.
3. A Failure Simulation Test should light only the rack alarm in the rack containing the equipment being tested.
4. "P" Rack is a powered rack, while a "N" Rack is a non-powered rack, receiving its power from the "P" rack.

DATE 17 JULY 1963TESTER W. J. SchreinerSUPERVISOR Frank J. SkorsinskiQUALITY ASSURANCE Alan Paul

FEDERAL ELECTRIC CORPORATION

BR 11/85

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS LINK TEST

Transmission Path: From Station GA to STATION GPA

	EXPECTED	ACTUAL
1. DIVERSITY TESTS (ALL CONFIGURATIONS)		
A. Pilot Level at A IN terminals of Control Panel	-47 to -53 db	<u>-51.8</u> db
B. Pilot Level at B IN terminals of Control Panel	-47 to -53 db	<u>-51.5</u> db
C. Pilot Level at SIG OUT terminals of Control Panel -50 <u>+0.25</u> db with SERVICE SWITCH in A-DISABLE position.		<u>-49.8</u> db
D. Pilot Level at SIG OUT terminals of Control Panel -50 <u>+0.25</u> db with SERVICE SWITCH in B-DISABLE position.		<u>-50.0</u> db
E. Pilot Level <u>variation</u> at SIG OUT terminals of control panel with "A" power off.	<u>+1.0</u> db	<u>-.7</u> db
F. Pilot Level <u>variation</u> at SIG OUT terminals of Control Panel with "B" power off.	<u>+1.0</u> db	<u>-.7</u> db
2. BASEBAND (Use Data Sheet BR11/86 for GA-GPA Link)		
A. Level, 100 Kc RX	-34 <u>+ 0.5</u> db	<u>XXX</u> db
B. Frequency Response		
60 Kc		<u>XXX</u> db
100 Kc		<u>XXX</u> db
200 Kc	+ 0.5 db From	<u>XXX</u> db
300 Kc 300 Kc	100Kc Reference	<u>XXX</u> db
400 Kc	Level	<u>XXX</u> db
400 Kc		<u>XXX</u> db
500 Kc.		<u>XXX</u> db

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BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS LINK TEST

STATION GATransmission Path: From Station GA to STATION GPA

EXPECTED

ACTUAL

3. ORDER WIRE

A. Level, 1 Kc RX

 -20 ± 1 dbm-20 dbm

B. Frequency Response

0.5 Kc

-20.4 dbm

1 Kc

 -2 db, $+1$ db From
1 Kc Reference Level-20.0 dbm

4 Kc

-20.1 dbm

10 Kc

-20.1 dbm

12 Kc

-20.5 dbm

4. INTERMODULATION DISTORTION

A. One MW-503A Link

Maximum 45 db

48.0 db

RCVR "A" 48 db RCVR "B" 45.5 db

5. RECEIVED SIGNAL POWER

A. Receiver A

-38.1 dbm

B. Receiver B

-36.8 dbm

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BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS LINK TEST

STATION GATransmission Path: From Station GA to Station GPA

	EXPECTED	ACTUAL
6. NET PATH LOSS		
A. NPL, Path A	(Refer to following list for expected results.)	<u>67.7</u> db
B. NPL, Path B		<u>66.4</u> db

C. Expected Results

<u>Test Link</u>	<u>Maximum NPL</u>
GA-GPA	68.8 db
GPA-GBA	74.2
GPA-GIM	60.0
GPA-GTA	64.5
GHO-GPE	63.2
GHO-GAG	62.2
TID-TIC	66.3
TKG-TKH-TKA	79.5
TKA-TKR	65.5
TKR-TIZ	65.9
TAL-TKG	73.8
TDY-TDI	64.5

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BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS LINK TEST

STATION GA

Transmission Path: From Station GA to STATION GPA

EXPECTED

ACTUAL

7. SIGNAL-TO-NOISE RATIO

A. Receiver A

(Refer to FIG. 9 of
this procedure for the
expected results.)

75
80 db

B. Receiver B

75.5 db

C. Combined

80 db

DATE 14 July 1963

TESTER

Jack H. Thiel

SUPERVISOR

Paul J. Clancy

QUALITY ASSURANCE

Don Randall

GEEIA

Robert A. Legler

FEDERAL ELECTRIC CORPORATION

BR II/85

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DATA SHEET

MW-503A LOS LINK TEST

Transmission Path: From Station GA to Station GPA

	EXPECTED	ACTUAL
1. DIVERSITY TESTS (ALL CONFIGURATIONS)		
A. Pilot Level at A IN terminals of Control Panel	-47 to -53 db	<u>52.8</u> db
B. Pilot Level at B IN terminals of Control Panel	-47 to -53 db	<u>52.7</u> db
C. Pilot Level at SIG OUT terminals of Control Panel -50 <u>+0.25</u> db with SERVICE SWITCH in A-DISABLE position.		<u>50</u> db
D. Pilot Level at SIG OUT terminals of Control Panel -50 <u>+0.25</u> db with SERVICE SWITCH in B-DISABLE position.		<u>50</u> db
E. Pilot Level <u>variation</u> at SIG OUT terminals of control panel with "A" power off.	<u>+1.0</u> db	<u>50</u> db
F. Pilot Level <u>variation</u> at SIG OUT terminals of Control Panel with "B" power off.	<u>+1.0</u> db	<u>50</u> db
2. BASEBAND (Use Data Sheet BR11/86 for GA-GPA Link)		
A. Level, 100 Kc RX	-34 <u>+ 0.5</u> db	<u>N/A</u> db
B. Frequency Response		
60 Kc		<u>N/A</u> db
100 Kc		<u>N/A</u> db
200 Kc	+ 0.5 db From 100Kc Reference	<u>N/A</u> db
300 Kc 350 Kc	Level	<u>N/A</u> db
400 Kc		<u>N/A</u> db
500 Kc.		<u>N/A/</u> db

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DATA SHEET

MW-503A LOS LINK TEST

STATION GA to STATION GPATransmission Path: From Station GA to STATION GPA

EXPECTED

ACTUAL

3. ORDER WIRE

A. Level, 1 Kc RX

-20 \pm 1 dbm-20 dbm

B. Frequency Response

0.5 Kc

-20.4 dbm

1 Kc

20 dbm-2 db, +1 db From
1 Kc Reference Level

4 Kc

-19.7 dbm

10 Kc

19.2 dbm

12 Kc

19.8 dbm

4. INTERMODULATION DISTORTION

A. One MW-503A Link

Idle Noise

RX A 56 db

Maximum 45 db

RX A 52 dbRX B 54 dbRX B 49 db5. RECEIVED SIGNAL POWER Combined 57 dbCombined 52 db

A. Receiver A

34.4 dbm

B. Receiver B

33.9 dbm

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BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS LINK TEST

STATION GA GPA GATransmission Path: From Station GA to Station GA

	EXPECTED	ACTUAL
6. NET PATH LOSS	MAX. 68.8 db	
A. NPL, Path A	(Refer to following list for expected results.)	<u>62.2</u> db
B. NPL, Path B		<u>61.7</u> db
C. Expected Results		

<u>Test Link</u>	<u>Maximum NPL</u>
<u>GA-GPA</u>	<u>68.8 db</u>
GPA-GBA	74.2
GPA-GIM	60.0
GPA-GTA	64.5
GHO-GPE	63.2
GHO-GAG	62.2
TID-TIC	66.3
TKG-TKH-TKA	79.5
TKA-TKR	65.5
TKR-TIZ	65.9
TAL-TKG	73.8
TDY-TDI	64.5

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DATA SHEET

MW-503A LOS LINK TEST

STATION _____ GPA _____
Transmission Path: From Station GA to STATION GPA

	... EXPECTED	ACTUAL
	Mih.	
7. SIGNAL-TO-NOISE RATIO	75 db	
A. Receiver A	(Refer to FIG.9 of this procedure for the expected results.)	<u>76</u> db
B. Receiver B		<u>75</u> db

DATE 14 July 1963TESTER Vincent QuinnSUPERVISOR J. WenzelQUALITY ASSURANCE M. GriffinGEEIA S. R. Polak

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BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS LINK TEST

STATION GAB x8 GPATransmission Path: From Station GAB to STATION GPA

	EXPECTED	ACTUAL
1. DIVERSITY TESTS (ALL CONFIGURATIONS)		
A. Pilot Level at A IN terminals of Control Panel	-47 to -53 db	<u>-50.8</u> db
B. Pilot Level at B IN terminals of Control Panel	-47 to -53 db	<u>-50.8</u> db
C. Pilot Level at SIG OUT terminals of Control Panel with SERVICE SWITCH in A-DISABLE position.	-50 <u>+0.25</u> db	<u>-50</u> db
D. Pilot Level at SIG OUT terminals of Control Panel with SERVICE SWITCH in B-DISABLE position.	-50 <u>+0.25</u> db	<u>-50</u> db
E. Pilot Level <u>variation</u> at SIG OUT terminals of control panel with "A" power off.	<u>+1.0</u> db	<u>49.8</u> db
F. Pilot Level <u>variation</u> at SIG OUT terminals of Control Panel with "B" power off.	<u>+1.0</u> db	<u>50</u> db
2. BASEBAND (Use Data Sheet BR11/86 for GA-GPA Link)		
A. Level, 100 Kc RX	-34 <u>+ 0.5</u> db	<u>-34</u> db
B. Frequency Response		
60 Kc		<u>-34.3</u> db
100 Kc		<u>-34</u> db
200 Kc	+ 0.5 db From 100Kc Reference Level	<u>-33.65</u> db
300 Kc 350 Kc		<u>-33.9</u> db
400 Kc		<u>-34.1</u> db
500 Kc.		<u>-33.85</u> db

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BIG RALLY II PROJECT

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MW-503A LOS LINK TEST

STATION GPATransmission Path: From Station GAB to STATION GPA

EXPECTED

ACTUAL

3. CORD WIRE

A. Level, 1 Kc RX

-20 \pm 1 dbm-20 dbm

B. Frequency Response

0.5 Kc

-20.8 dbm

1 Kc

-20 dbm-2 db, +1 db From
1 Kc Reference Level

4 Kc

-19.8 dbm

10 Kc

-20.7 dbm

12 Kc

-21.2 dbm

4. INTERMODULATION DISTORTION

Idle noise

A. One MW-503A Link

RX-A 51

Maximum 45 db

Intermod. Xmtr.

RX-A 42 db

RX-B 52

RX-B 43

5. RECEIVED SIGNAL POWER

Combined- 54

Combined 42

A. Receiver A

45.3 dbm

B. Receiver B

43.2 dbm

Note: Intermodulation does not meet specifications.

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BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS LINK TEST

STATION GPATransmission Path: From Station GAB to Station GPA

	EXPECTED	ACTUAL
6. NET PATH LOSS		
A. NPL, Path A	(Refer to following list for expected results.)	<u>73.2</u> db
B. NPL, Path B		<u>71.1</u> db
C. Expected Results		

<u>Test Link</u>	<u>Maximum NPL</u>
GA-GPA	68.8 db
<u>GPA-GBA</u>	<u>74.2</u>
GPA-GIM	60.0
GPA-GTA	64.5
GHO-GPE	<u>63.2</u>
GHO-GAG	<u>62.2</u>
TID-TIC	66.3
TKG-TKH-TKA	79.5
TKA-TKR	65.5
TKR-TIZ	65.9
TAL-TKG	73.8
TDY-TDI	64.5

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DATA SHEET

MW-503A LOS LINK TEST

Transmission Path: From Station GAB to STATION GPA

STATION GPA

EXPECTED

ACTUAL

7. SIGNAL-TO-NOISE RATIO

A. Receiver A

(Refer to FIG. 9 of
this procedure for the
expected results.)

67.5

-69 db

B. Receiver B

70.5

-69 db

DATE 17 July 1963

TESTER

Vincent Quinn

SUPERVISOR

J. Wenzel

QUALITY ASSURANCE

M. Cris

GEEIA

S. Pelt

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BR 11/85

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS LINK TEST

STATION GAB

Transmission Path: From Station GAB to STATION GPA

	EXPECTED	ACTUAL
I. DIVERSITY TESTS (ALL CONFIGURATIONS)		
A. Pilot Level at A IN terminals of Control Panel	-47 to -53 db	<u>-51.1</u> db
B. Pilot Level at B IN terminals of Control Panel	-47 to -53 db	<u>-51.8</u> db
C. Pilot Level at SIG OUT terminals of Control Panel -50 <u>+0.25</u> db with SERVICE SWITCH in A-DISABLE position.		<u>-50.0</u> db
D. Pilot Level at SIG OUT terminals of Control Panel -50 <u>+0.25</u> db with SERVICE SWITCH in B-DISABLE position.		<u>-50.0</u> db
E. Pilot Level <u>variation</u> at SIG OUT terminals of control panel with "A" power off.	<u>+1.0</u> db	<u>-.7</u> db
F. Pilot Level <u>variation</u> at SIG OUT terminals of Control Panel with "B" power off.	<u>+1.0</u> db	<u>-.7</u> db
2. BASEBAND (Use Data Sheet BR11/86 for GA-GPA Link)		
A. Level, 100 Kc RX	-34 <u>+ 0.5</u> db	<u>-34.0</u> db
B. Frequency Response		
60 Kc		<u>-34.2</u> db
100 Kc		<u>-34.0</u> db
200 Kc	+ 0.5 db From 100Kc Reference Level	<u>-33.9</u> db
<u>350 Kc</u>		<u>-34.1</u> db
400 Kc		<u>-34.1</u> db
500 Kc.		<u>-34.2</u> db

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BIG RALLY II PROJECT

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MW-503A LOS LINK TEST

STATION GABTransmission Path: From Station GAB to STATION GPA

EXPECTED

ACTUAL

3. CORDER WIRE

A. Level, 1 Kc RX

-20 +1 dbm-20.0 dbm

B. Frequency Response

0.5 Kc

-21.2 dbm

1 Kc

-20.0 dbm-2 db, +1 db From
1 Kc Reference Level

4 Kc

-19.2 dbm

10 Kc

-19.8 dbm

12 Kc

-20.1 dbm4. INTERMODULATION DISTORTION NOTE. With B Tx at GPA the combined
intermod was 42DB

C. RECEIVER B

A. One MW-503A Link

Maximum 45 db

47 db

B. RECEIVER A

48 db~~48~~ 47 db

5. RECEIVED SIGNAL POWER

A. Receiver A

-46.1 dbm

B. Receiver B

-43.2 dbm

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BR 11/85

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DATA SHEET

MW-503A LOS LINK TEST

STATION GABTransmission Path: From Station GAB to Station GPA

	EXPECTED	ACTUAL
6. NET PATH LOSS		
A. NPL, Path A	(Refer to following list for expected results.)	<u>75.7</u> db
B. NPL, Path B		<u>72.8</u> db

C. Expected Results

<u>Test Link</u>	<u>Maximum NPL</u>
GA-GPA	68.8 db
GPA-GBA	74.2
GPA-GIM	60.0
GPA-GTA	64.5
GHO-GPE	<u>63.2</u>
GHO-GAG	<u>62.2</u>
TID-TIC	66.3
TKG-TKH-TKA	79.5
TKA-TKR	65.5
TKR-TIZ	65.9
TAL-TKG	73.8
TDY-TDI	64.5

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BR 11/85

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS LINK TEST

STATION GAB

Transmission Path: From Station GAB to STATION GPA

EXPECTED -- ACTUAL

7. SIGNAL-TO-NOISE RATIO

A. Receiver A

(Refer to FIG.9 of
this procedure for the
expected results.)

66.5
74 db

B. Receiver B

70
72 db

C. COMBINED

75 db

DATE 18 JULY 1963

TESTER W. J. Schramke

SUPERVISOR Frank J. Skopinaki

QUALITY ASSURANCE Robert D. Legler

GEEIA Robert D. Legler

FEDERAL ELECTRIC CORPORATION

BR 11/86

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS LINK TEST

(GA - GPA LINK ONLY)

Transmission Path: From Station GA to STATION GPA

STATION GA

Basband (GA - GPA LINK)

	EXPECTED	ACTUAL
A. Level, 100 kc RX		
1) Site GPA	-40 \pm 0.5 db	<u>N/A</u> db
2) Site GA	-34 \pm 0.5 db	<u>-34</u> db
B. Frequency Response		
12 kc		<u>-34</u> db
60 kc		<u>-33.9</u> db
100 kc		<u>-34</u> db
200 kc	+ 0.5 db From	<u>-33.9</u> db
300 kc	100 kc Reference	<u>-34.1</u> db
400 kc	Level	<u>-33.25</u> db
500 kc		<u>-33.5</u> db

DATE 14 July 1963TESTER Jack H. ThindSUPERVISOR Paul J. VanerportQUALITY ASSURANCE Don BullGEEIA Robert A. Legler 4-49

FEDERAL ELECTRIC CORPORATION

BR II/86

BIG RALLY II PROJECT

DATA SHEET

MW-503A LOS LINK TEST

(GA - GPA LINK ONLY)

Transmission Path: From Station GA to STATION GPA

Baseband (GA - GPA LINK)

	EXPECTED	ACTUAL
A. Level, 100 kc RX		
1) Site GPA	-40 ± 0.5 db	<u>40.2</u> db
2) Site GA	-34 ± 0.5 db	<u>N/A/</u> db
B. Frequency Response		
12 kc		<u>+ 0.1</u> db
60 kc		<u>+ 0.2</u> db
100 kc		<u>+ 0.1</u> db
200 kc	± 0.5 db From	<u>0.0</u> db
300 kc	100 kc Reference	<u>- 0.3</u> db
400 kc	Level	<u>- 0.3</u> db
500 kc		<u>- 0.2</u> db

* Reference Level used- Fig.-40.2 in
step A Site GPA,

DATE 14 July 1963TESTER Vincent QuinnSUPERVISOR J. W. WynnQUALITY ASSURANCE M. E. E. E.GEEIA S. E. E. E.

BIG RALLY II PROJECT

DATA SHEET

AN/MRC-85 STATION TEST

EXCITER

ADDENDUMStation L.D.Transmission Path: From Station L.D. to Station L.R.Exciter Serial No. D13 #2 Frequency 360.49997 MCAN/~~MRC-85~~ ^{MRC-85} EXCITER, RADIO

	EXPECTED	ACTUAL
✓ 1. POWER OUTPUT Power Output	Minimum <u>7</u> watts	<u>9</u> watts
✓ 2. CARRIER FREQUENCY Frequency	.001% of assigned <u>360.49883</u> MC	
✓ 3. EXCITER RESPONSE AND DEVIATION Lower 1 db point		<u>69.2</u> MC
Upper 1 db point		<u>70.9</u> MC
Bandwidth	Minimum 1.5 MC	<u>1.8</u> MC
✓ 4. HF DEVIATION Level at J4	-14 dbm \pm 0.5 dbm	<u>-14</u> dbm
5. ADJUSTMENT OF FOUR RECEIVERS		<u>J.S.</u> Initials
✓ 6. LF DEVIATION Signal level at J14	-10 dbm \pm 0.5 dbm	<u>-10.0</u> dbm
✓ 7. ORDER WIRE DEVIATION & LEVEL Output at J26-J27	-10 dbm \pm 0.5 dbm	<u>-10.0</u> dbm
✓ 8. PILOT TONE LEVEL AND DEVIATION Radio Pilot Level at J51	20 to 35 volts	<u>20</u> volts
Deviation at J14 on S1893	-20 dbm \pm 0.5 dbm	<u>-20</u> dbm
✓ 9. DUAL MODULATOR OPERATION Exciter No. 1 Driving		<u>J.S.</u> Initials
Exciter No. 2 Driving		<u>J.S.</u> Initials

DATE 8 June 63TESTER J.S. [Signature]SUPERVISOR J.S. [Signature]QUALITY ASSURANCE J.S. [Signature]

Sheet 1 of 1

BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TEST

ADDENDUMStation 1.DTransmission Path: From Station 1.D to Station 1.RExciter Serial No. 014 ± 1 Frequency 360.49997 MCAN/~~85~~ ^{MRC-85} EXCITER, RADIO

	EXPECTED	ACTUAL
1. POWER OUTPUT Power Output	Minimum ⁹ 8 watts	<u>9.5</u> watts
2. CARRIER FREQUENCY Frequency	.001% of assigned	<u>360.49997</u> MC
3. EXCITER RESPONSE AND DEVIATION Lower 1 db point		<u>6.9</u> MC
Upper 1 db point		<u>70.8</u> MC
Bandwidth	Minimum 1.5 MC	<u>1.8</u> MC
4. HF DEVIATION Level at J4	-14 dbm \pm 0.5 dbm	<u>-14</u> dbm
5. ADJUSTMENT OF FOUR RECEIVERS		<u>B.J.</u> Initials
6. LF DEVIATION Signal level at J14	-10 dbm \pm 0.5 dbm	<u>-10</u> dbm
7. ORDER WIRE DEVIATION & LEVEL Output at J26-J27	-10 dbm \pm 0.5 dbm	<u>-10</u> dbm
8. PILOT TONE LEVEL AND DEVIATION Radio Pilot Level at J51	20 to 35 volts	<u>21</u> volts
Deviation at J14 on S1893	-20 dbm \pm 0.5 dbm	<u>-20</u> dbm
9. DUAL MODULATOR OPERATION Exciter No. 1 Driving		<u>B.J.</u> Initials
Exciter No. 2 Driving		<u>B.J.</u> Initials

DATE 7/2/63TESTER [Signature]SUPERVISOR [Signature]QUALITY ASSURANCE [Signature]

Sheet 1 of 1

BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TESTADDENDUMStation IR-WTransmission Path: From Station IR-W to Station ID-EExciter Serial No. 016 I-V Frequency 392.4999 MCAN/~~MRC-85~~^{MRC-85} EXCITER, RADIO

	EXPECTED	ACTUAL
1. POWER OUTPUT		
Power Output	Minimum ⁸ 10 watts	<u>10.2</u> watts
2. CARRIER FREQUENCY		
Frequency	.001% of assigned	<u>392.4993</u> MC
3. EXCITER RESPONSE AND DEVIATION		
Lower 1 db point		<u>69.2075</u> MC
Upper 1 db point		<u>70.2995</u> MC
Bandwidth	Minimum 1.5 MC	<u>1.6930</u> MC
4. HF DEVIATION		
Level at J4	-14 dbm <u>±</u> 0.5 dbm	<u>-14</u> dbm
5. ADJUSTMENT OF FOUR RECEIVERS		<u>RBS</u> Initials
6. LF DEVIATION		
Signal level at J14	-10 dbm <u>±</u> 0.5 dbm	<u>-10</u> dbm
7. ORDER WIRE DEVIATION & LEVEL		
Output at J26-J27	-10 dbm <u>±</u> 0.5 dbm	<u>-10</u> dbm
8. PILOT TONE LEVEL AND DEVIATION		
Radio Pilot Level at J51	20 to 35 volts	<u>21</u> volts
Deviation at J14 on S1893	-20 dbm <u>±</u> 0.5 dbm	<u>20.2</u> dbm
9. DUAL MODULATOR OPERATION		
Exciter No. 1 Driving		
Exciter No. 2 Driving		

UNSATISFACTORY Initials
" " Initials

DATE 14 June 1963TESTER Martin L. LuptonSUPERVISOR R. B. SmithQUALITY ASSURANCE R. B. Smith

Sheet 1 of 1

MRP

BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TESTADDENDUMStation 1R-WTransmission Path: From Station 1R-W to Station 1D-EExciter Serial No. 015 2-H Frequency 392.4999 MCAN/~~MRC-85~~ EXCITER, RADIO

	EXPECTED	ACTUAL
1. POWER OUTPUT		
Power Output	Minimum <u>9</u> watts	<u>10.2</u> watts
2. CARRIER FREQUENCY		
Frequency	.001% of assigned	<u>392.4980</u> MC
3. EXCITER RESPONSE AND DEVIATION		
Lower 1 db point		<u>69.2195</u> MC
Upper 1 db point		<u>70.7595</u> MC
Bandwidth	Minimum 1.5 MC	<u>1.5400</u> MC
4. HF DEVIATION		
Level at J4	-14 dbm \pm 0.5 dbm	<u>-14</u> dbm
5. ADJUSTMENT OF FOUR RECEIVERS		<u>RBS</u> Initials
6. LF DEVIATION		
Signal level at J14	-10 dbm \pm 0.5 dbm	<u>-10</u> dbm
7. ORDER WIRE DEVIATION & LEVEL		
Output at J26-J27	-10 dbm \pm 0.5 dbm	<u>-10</u> dbm
8. PILOT TONE LEVEL AND DEVIATION		
Radio Pilot Level at J51	20 to 35 volts	<u>22.5</u> volts
Deviation at J14 on S1893	-20 dbm \pm 0.5 dbm	<u>20.4</u> dbm
9. DUAL MODULATOR OPERATION		
Exciter No. 1 Driving		
Exciter No. 2 Driving		

UNSATISFACTORY

Initials

"

Initials

DATE 14 JUNE 1965TESTER M. K. KephartSUPERVISOR R. B. SewardQUALITY ASSURANCE R. B. Seward

Sheet 1 of 1

LRP

BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TESTADDENDUMStation 1R-ETransmission Path: From Station 1R-E to Station 1C-WExciter Serial No. 009 2-H Frequency 396.4999 MCMRC-85
AN/~~MRC-85~~ EXCITER, RADIO

	EXPECTED	ACTUAL
1. POWER OUTPUT		
Power Output	Minimum <u>9</u> watts	<u>9</u> watts
2. CARRIER FREQUENCY		
Frequency	.001% of assigned	<u>396.4999</u> MC
3. EXCITER RESPONSE AND DEVIATION		
Lower 1 db point		<u>69.1537</u> MC
Upper 1 db point		<u>70.8269</u> MC
Bandwidth	Minimum 1.5 MC	<u>1.6732</u> MC
4. HF DEVIATION		
Level at J4	-14 dbm <u>±</u> 0.5 dbm	<u>-14</u> dbm
5. ADJUSTMENT OF FOUR RECEIVERS		<u>RBS</u> Initials
6. LF DEVIATION		
Signal level at J14	-10 dbm <u>±</u> 0.5 dbm	<u>-10</u> dbm
7. ORDER WIRE DEVIATION & LEVEL		
Output at J26-J27	-10 dbm <u>±</u> 0.5 dbm	<u>-10</u> dbm
8. PILOT TONE LEVEL AND DEVIATION		
Radio Pilot Level at J51	20 to 35 volts	<u>24</u> volts
Deviation at J14 on S1893	-20 dbm <u>±</u> 0.5 dbm	<u>-20</u> dbm
9. DUAL MODULATOR OPERATION		
Exciter No. 1 Driving		
Exciter No. 2 Driving		

UNSATISFACTORY

Initials

"

Initials

DATE 14 JUNE 1963

TESTER

E. Hallen

SUPERVISOR

R. W. B. B. B.

QUALITY ASSURANCE

R. B. B. B.

Sheet 1 of 1

ARP

BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TEST

ADDENDUMStation IR-ETransmission Path: From Station IR-E to Station IC-WExciter Serial No. 010 I-V Frequency 396.4999 MCAN/~~MRC-85~~ ^{MRC-85} EXCITER, RADIO

	EXPECTED	ACTUAL
1. POWER OUTPUT		
Power Output	Minimum <u>9</u> watts	<u>9</u> watts
2. CARRIER FREQUENCY		
Frequency	.001% of assigned	<u>396.4988</u> MC
3. EXCITER RESPONSE AND DEVIATION		
Lower 1 db point		<u>69.2265</u> MC
Upper 1 db point		<u>70.7619</u> MC
Bandwidth	Minimum 1.5 MC	<u>1.5414</u> MC
4. HF DEVIATION		
Level at J4	-14 dbm <u>±</u> 0.5 dbm	<u>-14.3</u> dbm
5. ADJUSTMENT OF FOUR RECEIVERS		<u>RBS</u> Initials
6. LF DEVIATION		
Signal level at J14	-10 dbm <u>±</u> 0.5 dbm	<u>-10</u> dbm
7. ORDER WIRE DEVIATION & LEVEL		
Output at J26-J27	-10 dbm <u>±</u> 0.5 dbm	<u>-10</u> dbm
8. PILOT TONE LEVEL AND DEVIATION		
Radio Pilot Level at J51	20 to 35 volts	<u>24</u> volts
Deviation at J14 on S1893	-20 dbm <u>±</u> 0.5 dbm	<u>-20</u> dbm
9. DUAL MODULATOR OPERATION		
Exciter No. 1 Driving		<u>UNSATISFACTORY</u> Initials
Exciter No. 2 Driving		Initials

DATE 14 June 1963TESTER E. HallSUPERVISOR R. W. ...QUALITY ASSURANCE R.B. Spear

Sheet 1 of 1

BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TESTADDENDUMStation IC WESTTransmission Path: From Station IC $\frac{1}{2}$ to Station IRExciter Serial No. 003 #2 Frequency 367.500 MCAN/~~MRC-85~~ EXCITER, RADIO

	EXPECTED	ACTUAL
1. POWER OUTPUT		
Power Output	Minimum ⁷ 10 watts	<u>11.10</u> watts
2. CARRIER FREQUENCY		
Frequency	.001% of assigned	<u>367.501</u> MC
3. EXCITER RESPONSE AND DEVIATION		
Lower 1 db point		<u>68.65</u> MC
Upper 1 db point		<u>70.8</u> MC
Bandwidth	Minimum 1.5 MC	<u>2.2</u> MC
4. HF DEVIATION		
Level at J4	-14 dbm \pm 0.5 dbm	<u>-14</u> dbm
5. ADJUSTMENT OF FOUR ^{THREE} RECEIVERS		Initials
6. LF DEVIATION		
Signal level at J14	-10 dbm \pm 0.5 dbm	<u>-10</u> dbm
7. ORDER WIRE DEVIATION & LEVEL		
Output at J26-J27	-10 dbm \pm 0.5 dbm	<u>-10</u> dbm
8. PILOT TONE LEVEL AND DEVIATION		
Radio Pilot Level at J51	20 to 35 volts	<u>21</u> volts
Deviation at J14 on S1893	-20 dbm \pm 0.5 dbm	<u>-20</u> dbm
9. DUAL MODULATOR OPERATION		
Exciter No. 1 Driving		Initials
Exciter No. 2 Driving		Initials

DATE 16 JUNE 63TESTER J. VardianSUPERVISOR F. H. GaffneyQUALITY ASSURANCE William R. Wolf

Sheet 1 of 1

GEEIA

Robert S. Legler

BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TESTADDENDUMStation IC EASTTransmission Path: From Station IC to Station GKExciter Serial No. 008 # 1 Frequency 360.5 MCAN/~~ERC-39~~ ^{MRC-85} EXCITER, RADIO

	EXPECTED	ACTUAL
1. POWER OUTPUT		
Power Output	Minimum ⁹ 10 watts	<u>10</u> watts
2. CARRIER FREQUENCY		
Frequency	.001% of assigned	<u>360.5004</u> MC
3. EXCITER RESPONSE AND DEVIATION		
Lower 1 db point		<u>359.2</u> MC
Upper 1 db point		<u>361.5</u> MC
Bandwidth	Minimum 1.5 MC	<u>1.88</u> MC
4. HF DEVIATION		
Level at J4	-14 dbm \pm 0.5 dbm	<u>-14</u> dbm
5. ADJUSTMENT OF FOUR RECEIVERS		<u>RS</u> Initials
6. LF DEVIATION		
Signal level at J14	-10 dbm \pm 0.5 dbm	<u>-10</u> dbm
7. ORDER WIRE DEVIATION & LEVEL		
Output at J26-J27	-10 dbm \pm 0.5 dbm	<u>-10.2</u> dbm
8. PILOT TONE LEVEL AND DEVIATION		
Radio Pilot Level at J51	20 to 35 volts	<u>25</u> volts
Deviation at J14 on S1893	-20 dbm \pm 0.5 dbm	<u>-20</u> dbm
9. DUAL MODULATOR OPERATION		
Exciter No. 1 Driving		<u>RS</u> Initials
Exciter No. 2 Driving		<u>RS</u> Initials

DATE JUN 22 1963TESTER R. S. SaylorSUPERVISOR W. L. B. 2005QUALITY ASSURANCE W. L. B. 2005

Sheet 1 of 1

GEETA

Robert S. Saylor

BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TEST

ADDENDUMStation IC EASTTransmission Path: From Station IC to Station GKExciter Serial No. 007 # 2 Frequency 360.5000 MCMRC-85
AN/~~FRC-39~~ EXCITER, RADIO

EXPECTED

ACTUAL

1. POWER OUTPUT

Power Output

Minimum ⁹~~10~~ watts10 watts

2. CARRIER FREQUENCY

Frequency

.001% of assigned

360.5172 MC

3. EXCITER RESPONSE AND DEVIATION

Lower 1 db point

359.75 MC

Upper 1 db point

361.32 MC

Bandwidth

Minimum 1.5 MC

1.57 MC

4. HF DEVIATION

Level at J4

-14 dbm \pm 0.5 dbm-14.0 dbm

5. ADJUSTMENT OF FOUR RECEIVERS

RS Initials

6. LF DEVIATION

Signal level at J14

-10 dbm \pm 0.5 dbm-10.0 dbm

7. ORDER WIRE DEVIATION & LEVEL

Output at J26-J27

-10 dbm \pm 0.5 dbm-10.0 dbm

8. PILOT TONE LEVEL AND DEVIATION

Radio Pilot Level at J51

20 to 35 volts

25.5 volts

Deviation at J14 on S1893

-20 dbm \pm 0.5 dbm-20 dbm

9. DUAL MODULATOR OPERATION

Exciter No. 1 Driving

RS Initials

Exciter No. 2 Driving

B InitialsDATE JUN 22 1963TESTER P. ShoffSUPERVISOR F. J. H. [unclear]QUALITY ASSURANCE William K. [unclear]Sheet 1 of 1
GEEIARobert D. Legler

BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TESTADDENDUMStation G.K.Transmission Path: From Station G.K. to Station I.C.Exciter Serial No. 001 Frequency 389500 MCAN/~~MRC-85~~ ^{MRC-85} EXCITER, RADIO

	EXPECTED	ACTUAL
1. POWER OUTPUT Power Output	Minimum ⁹ watts	<u>11.2</u> watts
2. CARRIER FREQUENCY Frequency	.001% of assigned	<u>389,499,620</u> MC
3. EXCITER RESPONSE AND DEVIATION Lower 1 db point		<u>69.25</u> .75 MC
Upper 1 db point		<u>70.75</u> .75 MC
Bandwidth	Minimum 1.5 MC	<u>1.50</u> MC
4. HF DEVIATION Level at J4	-14 dbm \pm 0.5 dbm	<u>-13.5</u> - <u>-13.6</u> dbm
5. ADJUSTMENT OF FOUR RECEIVERS		<u>* BBD</u> Initials
6. LF DEVIATION Signal level at J14	-10 dbm \pm 0.5 dbm	<u>* -10</u> - <u>-10</u> dbm
7. ORDER WIRE DEVIATION & LEVEL Output at J26-J27	-10 dbm \pm 0.5 dbm	<u>* -10</u> - <u>-10</u> dbm
8. PILOT TONE LEVEL AND DEVIATION Radio Pilot Level at J51	20 to 35 volts	<u>* 24.7</u> <u>24.7</u> volts
Deviation at J14 on S1893	-20 dbm \pm 0.5 dbm	<u>* -19.8</u> <u>19.8</u> dbm
9. DUAL MODULATOR OPERATION Exciter No. 1 Driving		<u>N/A</u> Initials
Exciter No. 2 Driving		<u>* N/A</u> Initials

DATE 23 JUNE, 63TESTER [Signature]SUPERVISOR [Signature]QUALITY ASSURANCE [Signature]

BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TESTADDENDUMStation G.K.Transmission Path: From Station G.K. to Station I.C.Exciter Serial No. 005 #2 Frequency 389500 MCAN/~~MRC-85~~^{MRC-85} EXCITER, RADIO

	EXPECTED	ACTUAL
1. POWER OUTPUT		
Power Output	Minimum ⁹ 10 watts	<u>13</u> watts
2. CARRIER FREQUENCY		
Frequency	.001% of assigned	<u>389,499,902</u> <u>98</u> MC
3. EXCITER RESPONSE AND DEVIATION		
Lower 1 db point		<u>.75</u> MC
Upper 1 db point		<u>.75</u> MC
Bandwidth	Minimum 1.5 MC	<u>1.50</u> MC
4. HF DEVIATION		
Level at J4	-14 dbm \pm 0.5 dbm	<u>-14</u> dbm
5. ADJUSTMENT OF FOUR RECEIVERS		<u>BBB</u> Initials
6. LF DEVIATION		
Signal level at J14	-10 dbm \pm 0.5 dbm	<u>-10</u> dbm
7. ORDER WIRE DEVIATION & LEVEL		
Output at J26-J27	-10 dbm \pm 0.5 dbm	<u>-10</u> dbm
8. PILOT TONE LEVEL AND DEVIATION		
Radio Pilot Level at J51	20 to 35 volts	<u>25.3</u> volts
Deviation at J14 on S1893	-20 dbm \pm 0.5 dbm	<u>-20</u> dbm
9. DUAL MODULATOR OPERATION		
Exciter No. 1 Driving		Initials
Exciter No. 2 Driving		Initials

DATE 23 JUNE 63TESTER [Signature]SUPERVISOR [Signature]QUALITY ASSURANCE [Signature]

Sheet 1 of 1

BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TEST

ADDENDUMStation G.K.Transmission Path: From Station G.K. to Station G.A.Exciter Serial No. 006 005 Frequency 382.500 MC

MRC-85
AN/~~FRG-37~~ EXCITER, RADIO

		EXPECTED	ACTUAL	
			#1	#2
1. POWER OUTPUT				
Power Output	Minimum <u>9</u> watts		<u>9</u>	<u>9.6</u> watts
2. CARRIER FREQUENCY				
Frequency	<u>382.500158</u> .001% of assigned			<u>382.502085</u> MC
3. EXCITER RESPONSE AND DEVIATION				
Lower 1 db point			<u>.75</u>	<u>.75</u> MC
Upper 1 db point			<u>.75</u>	<u>.75</u> MC
Bandwidth	Minimum 1.5 MC		<u>1.5</u>	<u>1.5</u> MC
4. HF DEVIATION				
Level at J4	-14 dbm \pm 0.5 dbm		<u>-13.5</u>	<u>-13.7</u> dbm
5. ADJUSTMENT OF FOUR RECEIVERS				
			<u>B.B.</u>	Initials
6. LF DEVIATION				
Signal level at J14	-10 dbm \pm 0.5 dbm		<u>-9.5</u> <u>-10</u> <u>-10</u> <u>-9.5</u> *	dbm
7. ORDER WIRE DEVIATION & LEVEL				
Output at J26-J27	-10 dbm \pm 0.5 dbm		<u>-10</u> <u>-10</u> <u>-10</u> <u>-10</u>	dbm
8. PILOT TONE LEVEL AND DEVIATION				
Radio Pilot Level at J51	20 to 35 volts		<u>22.5</u>	<u>17.5</u> volts
Deviation at J14 on S1893	-20 dbm \pm 0.5 dbm			dbm
9. DUAL MODULATOR OPERATION				
Exciter No. 1 Driving			<u>-19.5</u> <u>-20.5</u> <u>-20.5</u> <u>-20.</u>	Initials
Exciter No. 2 Driving				Initials

* EXCITER #2'S READINGS ARE TYPICAL OF
EXCITER #1 ON ALL 4 RECEIVERS

DATE 3 July, 63TESTER A. C. ...SUPERVISOR ...QUALITY ASSURANCE W. E. ...

BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TESTADDENDUMStation GA MRC-85Transmission Path: From Station GA to Station GKExciter Serial No. 012 IV Frequency 366.5 MCAN/~~MRC-85~~ ^{MRC-85} EXCITER, RADIO

	EXPECTED	ACTUAL
1. POWER OUTPUT		
Power Output	Minimum ⁹ 10 watts	<u>9.5</u> watts
2. CARRIER FREQUENCY		
Frequency	.001% of assigned	<u>366.5009</u> MC
3. EXCITER RESPONSE AND DEVIATION		
Lower 1 db point		<u>.470</u> MC
Upper 1 db point		<u>.616</u> MC
Bandwidth	Minimum 1.5 MC	<u>1.086</u> MC
4. HF DEVIATION		
Level at J4	-14 dbm \pm 0.5 dbm	<u>-14</u> dbm
5. ADJUSTMENT OF FOUR RECEIVERS		<u>WDT</u> Initials
6. LF DEVIATION		
Signal level at J14	-10 dbm \pm 0.5 dbm	<u>-9.9</u> dbm
7. ORDER WIRE DEVIATION & LEVEL		
Output at J26-J27	-10 dbm \pm 0.5 dbm	<u>-10.3</u> dbm
8. PILOT TONE LEVEL AND DEVIATION		
Radio Pilot Level at J51	20 to 35 volts	<u>22.9</u> volts
Deviation at J14 on S1893	-20 dbm \pm 0.5 dbm	<u>-20.2</u> dbm
9. DUAL MODULATOR OPERATION		
Exciter No. 1 Driving	WILL WORK MANUALLY ONLY	<u>WDT</u> Initials
Exciter No. 2 Driving	WILL WORK MANUALLY ONLY	<u>WDT</u> Initials

DATE 10 July 1963TESTER W.D. Z...SUPERVISOR ...QUALITY ASSURANCE ...

Sheet 1 of 1

GEEIA

Robert S. Legler

BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TESTADDENDUMStation GA MRC-85Transmission Path: From Station GA to Station GKExciter Serial No. 011 (2H) Frequency 366.5 MCAN/~~MRC-85~~^{MRC-85} EXCITER, RADIO

	EXPECTED	ACTUAL
1. POWER OUTPUT		
Power Output	Minimum ⁹ 10 watts	<u>10.5</u> watts
2. CARRIER FREQUENCY		
Frequency	.001% of assigned	<u>366.5004</u> MC
3. EXCITER RESPONSE AND DEVIATION		
Lower 1 db point		<u>.784</u> MC
Upper 1 db point		<u>1</u> MC
Bandwidth	Minimum 1.5 MC	<u>1.784</u> MC
4. HF DEVIATION		
Level at J4	-14 dbm \pm 0.5 dbm	<u>-14</u> dbm
5. ADJUSTMENT OF FOUR RECEIVERS		<u>WDT</u> Initials
6. LF DEVIATION		
Signal level at J14	-10 dbm \pm 0.5 dbm	<u>-10</u> dbm
7. ORDER WIRE DEVIATION & LEVEL		
Output at J26-J27	-10 dbm \pm 0.5 dbm	<u>-10</u> dbm
8. PILOT TONE LEVEL AND DEVIATION		
Radio Pilot Level at J51	20 to 35 volts	<u>21.5</u> volts
Deviation at J14 on S1893	-20 dbm \pm 0.5 dbm	<u>-20</u> dbm
9. DUAL MODULATOR OPERATION		
Exciter No. 1 Driving	WILL WORK MANUALLY ONLY	<u>WDT</u> Initials
Exciter No. 2 Driving	WILL WORK MANUALLY "	<u>WDT</u> Initials

DATE July 8, 1963TESTER W. H. TateSUPERVISOR Paul W. WainwrightQUALITY ASSURANCE Don Korte

Sheet 1 of 1

GEEIA Robert D. Logler

FD-5
FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TEST
10 KW AMP.

BR II/12

STATION 1.17

Transmission Path: From Station 1.17 to Station 1.13

10 KW Amplifier Serial No. #11 16 Frequency 360.49797 MC

Exciter Serial No. 0141

AN/MRC-85 POWER AMPLIFIER, RADIO

		EXPECTED	ACTUAL
		1 KW	10 KW
1. INPUT POWER	Min. 6 watts	6 watts	<u>6.5</u> watts
2. OUTPUT POWER	Min. 1 KW	10 KW	<u>10 KW</u> watts
3. REFLECTED POWER	Max. 28 watts	280 watts	<u>160</u> watts
4. VSWR	Max. 1.40	1.40	<u>1.29</u>
5. FAULT RECYCLING			<u>NP</u> Initials
6. KLYSTRON COOLANT FLOW	Min. 17 GPM		<u>31</u> GPM

DATE 7 JUNE 63

TESTER R.E. Hobbs

SUPERVISOR R.E. Hobbs

QUALITY ASSURANCE BP K...

SRP

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TEST

BR II/12

STATION 1DTransmission Path: From Station 1D to Station 1R10 KW Amplifier Serial No. 014 Frequency 360.49777 MCExciter Serial No. 013

AN/MRC-85 POWER AMPLIFIER, RADIO

	EXPECTED		ACTUAL
	1 KW	10 KW	
1. INPUT POWER	Min. 6 watts	6 watts	<u>6</u> watts
2. OUTPUT POWER	Min. 1 KW	10 KW	<u>10 KW</u> watts
3. REFLECTED POWER	Max. 28 watts	280 watts	<u>180</u> watts
4. VSWR	Max. 1.40	1.40	<u>1.31</u>
5. FAULT RECYCLING			<u>JR</u> Initials
6. KLYSTRON COOLANT FLOW	Min. 17 GPM		<u>28.5</u> GPM

DATE 7 JUNE 63TESTER RF HelberSUPERVISOR RF HelberQUALITY ASSURANCE JG HelberSRP

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TEST

BR II/12

STATION IR-W

Transmission Path: From Station IR-W to Station ID-E

10 KW Amplifier Serial No. 016 2-H Frequency 392.4999 MC

Exciter Serial No. 015

AN/MRC-85 POWER AMPLIFIER, RADIO

	EXPECTED		ACTUAL
	1 KW	10 KW	
1. INPUT POWER	Min. 6 watts	6 watts	<u>5.5</u> watts
2. OUTPUT POWER	Min. 1 KW	10 KW	<u>10.5 K</u> watts
3. REFLECTED POWER	Max. 28 watts	280 watts	<u>170</u> watts
4. VSWR	Max. 1.40	1.40	<u>1.30</u>
5. FAULT RECYCLING			<u>RAS.</u> Initials
6. KLYSTRON COOLANT FLOW	Min. 17 GPM		<u>29.8</u> GPM

DATE JUNE 11, 1963

TESTER M. Luyshart

SUPERVISOR R. Westling

QUALITY ASSURANCE R.B. Sauer

ARE

5-17

IR-W
FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TEST

BR II/12

STATION IR-W

Transmission Path: From Station IR-W to Station ID-E

10 KW Amplifier Serial No. 015 I-V Frequency 372.4779 MC

Exciter Serial No. 016 I-V

AN/MRC-85 POWER AMPLIFIER, RADIO

		EXPECTED	ACTUAL
		1 KW	10 KW
1. INPUT POWER	Min. 6 watts	6 watts	<u>8.10</u> watts
2. OUTPUT POWER	Min. 1 KW	10 KW	<u>10K</u> watts
3. REFLECTED POWER	Max. 28 watts	280 watts	<u>2.0</u> watts
4. VSWR	Max. 1.40	1.40	<u>1.03</u>
5. FAULT RECYCLING			<u>RBS</u> Initials
6. KLYSTRON COOLANT FLOW	Min. 17 GPM		<u>29.5</u> GPM

DATE 11 JUNE 1963

TESTER M. Leiphart

SUPERVISOR R. W. Long

QUALITY ASSURANCE RBS

YRP

5-18

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TEST

BR II/12

STATION 1R-E

Transmission Path: From Station 1R-E to Station 1C-W

10 KW Amplifier Serial No. 010 2-H Frequency 396.4999 MC

Exciter Serial No. 009

AN/MRC-85 POWER AMPLIFIER, RADIO

		EXPECTED	ACTUAL
		1 KW	10 KW
1. INPUT POWER	Min. 6 watts	6 watts	<u>6</u> watts
2. OUTPUT POWER	Min. 1 KW	10 KW	<u>10.5K</u> watts
3. REFLECTED POWER	Max. 28 watts	280 watts	<u>10.0</u> watts
4. VSWR	Max. 1.40	1.40	<u>1.06</u> 1.06
5. FAULT RECYCLING			<u>RBS</u> Initials
6. KLYSTRON COOLANT FLOW	Min. 17 GPM		<u>31</u> GPM

DATE 10 JUNE, 1963

TESTER

E. Hattery

SUPERVISOR

P. W. Lewis

QUALITY ASSURANCE

R. B. Spear

A.R.P.

5-19

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TEST

BR II/12

STATION IR-E

Transmission Path: From Station IR-E to Station IC-W

10 KW Amplifier Serial No. 009 1-V Frequency 396.4999 MC

Exciter Serial No. 010

AN/MRC-85 POWER AMPLIFIER, RADIO

		EXPECTED	ACTUAL
		1 KW	10 KW
1. INPUT POWER	Min. 6 watts	6 watts	<u>6 Watts</u> watts
2. OUTPUT POWER	Min. 1 KW	10 KW	<u>10 K</u> watts
3. REFLECTED POWER	Max. 28 watts	280 watts	<u>120</u> watts
4. VSWR	Max. 1.40	1.40	<u>1.25</u>
5. FAULT RECYCLING			<u>RBS</u> Initials
6. KLYSTRON COOLANT FLOW	Min. 17 GPM		<u>28</u> GPM

DATE 11 June 63

TESTER E. Halley

SUPERVISOR R. W. Loring

QUALITY ASSURANCE R. B. Spear

ARP

5-20

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TEST

BR II/12

STATION IC WEST

Transmission Path: From Station IC to Station IR
Kly. #1
10 KW Amplifier Serial No. Kly. #2 Frequency 367.5 MC
Kly. #1 008
Exciter Serial No. Kly. #2 003

AN/MRC-85 POWER AMPLIFIER, RADIO

		EXPECTED		ACTUAL	
		1 KW	10 KW		
1. INPUT POWER	Min. 6 watts	6 watts	Kly. #1 <u>7</u> watts Kly. #2 <u>5</u> watts		
2. OUTPUT POWER	Min. 1 KW	10 KW	Kly. #1 <u>10</u> Kw Kly. #2 <u>10</u> Kwatts		
3. REFLECTED POWER	Max. 28 watts	280 watts	Kly. #1 <u>100</u> watts Kly. #2 <u>100</u> watts		
4. VSWR	Max. 1.40	1.40	Kly. #1 <u>1.22</u> VSWR Kly. #2 <u>1.22</u> VSWR		
5. FAULT RECYCLING			Initials		
6. KLYSTRON COOLANT FLOW	Min. 17 GPM	Kly. #1 <u>30</u> Kly. #2 <u>31</u> GPM			

DATE 16 JUNE 63

TESTER H. Dickson

SUPERVISOR F. H. J. J. J.

QUALITY ASSURANCE William R. Kote

GEEIA Robert A. Leifer

5-21

IC-E
FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TEST

BR II/12

STATION IC

Transmission Path: From Station IC to Station GK
10 KW Amplifier Serial No. V H
017 & 006 Frequency 360.5 MC
Exciter Serial No. 008 & 007

AN/MRC-85 POWER AMPLIFIER, RADIO

		EXPECTED	ACTUAL
Site IC has 10 KW Amp. ONLY	1 KW	10 KW	<u>V</u> <u>H</u> 017 006
1. INPUT POWER	Min. 6 watts	6 watts	8 9.6watts
2. OUTPUT POWER	Min. 1 KW	10 KW	10 10watts
3. REFLECTED POWER	Max. 28 watts	280 watts	180 100 20watts
4. VSWR	Max. 1.40	1.40	1.31 1.22
5. FAULT RECYCLING			<u>RS</u> Initials
6. KLYSTRON COOLANT FLOW	Min. 17 GPM		31 30GPM

DATE 24 JUNE 63

TESTER P. Hoff

SUPERVISOR F. H. Gardner

QUALITY ASSURANCE William R. H.

GEEIA Robert S. Lytle

5-22

GK-W
FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TEST

BR II/12

STATION G.K.

Transmission Path: From Station GK to Station I.C.

10 KW Amplifier Serial No. 002 Frequency 389500. MC

Exciter Serial No. 005 12

AN/MRC-85 POWER AMPLIFIER, RADIO

		EXPECTED	ACTUAL
		1 KW	10 KW
1. INPUT POWER	Min. 6 watts	6 watts	<u>6</u> watts
2. OUTPUT POWER	Min. 1 KW	10 KW	<u>10/11</u> watts
3. REFLECTED POWER	Max. 28 watts	280 watts	<u>250</u> watts
4. VSWR	Max. 1.40	1.40	<u>1.38</u>
5. FAULT RECYCLING			<u>Initials</u>
6. KLYSTRON COOLANT FLOW	Min. 17 GPM		<u>29.5</u> GPM

DATE 24 JUNE 63

TESTER EC Shingo Jr

SUPERVISOR Russell E Carter

QUALITY ASSURANCE T. E. Brown

5-23

612-2

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TEST

BR II/12

STATION G.K.

Transmission Path: From Station G.K. to Station I.C.

10 KW Amplifier Serial No. DD1 Frequency 389500 MC

Exciter Serial No. DD1 #1

AN/MRC-85 POWER AMPLIFIER, RADIO

	EXPECTED		ACTUAL
	1 KW	10 KW	
1. INPUT POWER	Min. 6 watts	6 watts	<u>6.5</u> watts
2. OUTPUT POWER	Min. 1 KW	10 KW	<u>10/15</u> watts
3. REFLECTED POWER	Max. 28 watts	280 watts	<u>240</u> watts
4. VSWR	Max. 1.40	1.40	<u>1.37</u>
5. FAULT RECYCLING			<u>BGB</u> Initials
6. KLYSTRON COOLANT FLOW	Min. 17 GPM		<u>29</u> GPM

DATE 24 JUNE 63

TESTER FC Shoupe Jr

SUPERVISOR Harold E. C. [unclear]

QUALITY ASSURANCE A. E. [unclear]

5-24

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TEST

BR II/12

STATION G.K.

Transmission Path: From Station G.K. to Station G.A.

10 KW Amplifier Serial No. #1 007 #2 030 Frequency MC

Exciter Serial No. #1 006 #2 005

AN/MRC-85 POWER AMPLIFIER, RADIO

	EXPECTED		ACTUAL	
	1 KW	10 KW	PA 1	PA 2
1. INPUT POWER	Min. 6 watts	6 watts	<u>6.6</u>	<u>6</u> watts
2. OUTPUT POWER	Min. 1 KW	10 KW	<u>10K</u>	<u>10K</u> watts
3. REFLECTED POWER	Max. 28 watts	280 watts	<u>35</u>	<u>90</u> watts
4. VSWR	Max. 1.40	1.40	<u>1.13</u>	<u>1.21</u>
5. FAULT RECYCLING			<u>BBB</u>	<u>BBB</u> Initials
6. KLYSTRON COOLANT FLOW	Min. 17 GPM		<u>30.5</u>	<u>30</u> GPM

DATE 3/14/63

TESTER [Signature]

SUPERVISOR [Signature]

QUALITY ASSURANCE B. E. Bass

5-25

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TEST

BR II/12

STATION GA MRC-85

Transmission Path: From Station GA to Station GK

10 KW Amplifier Serial No. 018 IV Frequency 366.5 MC

Exciter Serial No. 012

AN/MRC-85 POWER AMPLIFIER, RADIO

		EXPECTED	ACTUAL
		1 KW	10 KW
1. INPUT POWER	Min. 6 watts	6 watts	<u>13.6</u> watts
2. OUTPUT POWER	Min. 1 KW	10 KW	<u>10,000</u> watts
3. REFLECTED POWER	Max. 28 watts	280 watts	<u>170</u> watts
4. VSWR	Max. 1.40	1.40	<u>1.30</u>
5. FAULT RECYCLING			<u>WDT</u> Initials
6. KLYSTRON COOLANT FLOW	Min. 17 GPM		<u>30</u> GPM

DATE 10 July 1963

TESTER W. P. Felt

SUPERVISOR Paul W. Wainwright

QUALITY ASSURANCE Robert A. Legler

GEEIA

5-26

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 STATION TEST

BR II/12

STATION GA MRC-85

Transmission Path: From Station GA to Station GK

10 KW Amplifier Serial No. 014 #2H Frequency 366.5 MC

Exciter Serial No. 011 #2H

AN/MRC-85 POWER AMPLIFIER, RADIO

		EXPECTED	ACTUAL
		1 KW	10 KW
1. INPUT POWER	Min. 6 watts	6 watts	<u>11.6</u> watts
2. OUTPUT POWER	Min. 1 KW	10 KW	<u>10,000</u> watts
3. REFLECTED POWER	Max. 28 watts	280 watts	<u>32</u> <u>90</u> watts
4. VSWR	Max. 1.40	1.40	<u>1.12</u>
5. FAULT RECYCLING			<u>WDT</u> Initials
6. KLYSTRON COOLANT FLOW	Min. 17 GPM		<u>29</u> GPM

DATE 10 July 1963

TESTER W.D. Jett

SUPERVISOR Paul Haverly

QUALITY ASSURANCE Stan Lovell

GEEIA Robert A. Segler

5-27

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT

BR 11/13

DATA SHEET
AN/MRC-85 STATION TEST

REC. #11
S/N 025002

STATION 1D

Transmission Patch: Station 1R to Station 1D

1. RECEIVER GAIN

	EXPECTED	ACTUAL
RF Amplifier and Converter	Minimum 40 db	<u>N/A</u> db
Parametric Amplifier & Converter	Minimum 33 db	<u>N/A</u> db
2. RECEIVER SENSITIVITY

Signal Required Paramp.	Max. 3uv ^{2.5} <u>2.35</u> uv
For 20 db Quieting RF Amp.	Max. 4uv <u>N/A</u> uv
3. DC CONTROL VOLTAGE

DC Control Voltage	-35 volts \pm 3.5 <u>- 35</u> volts
--------------------	---------------------------------------
4. DIVERSITY COMBINER

	Rec A	Rec B
Receiver Outputs (Vertical) \pm 2 db of each other	#1 - <u>4.0</u> db	#3 - <u>4.5</u> db
Receiver Outputs (Horizontal) \pm 2 db of each other	#2 - <u>4.0</u> db	#4 - <u>4.5</u> db
Receiver A (V)	Reference	#1 <u>34.0</u> db
Receiver B (V)	Reference	#3 <u>35.5</u> db
Combined	AT LEAST 1.5 db Equal to or less than Rec A or Rec B	<u>3.25</u> db
Receiver A (H)	Reference	#2 - <u>34.75</u> db
Receiver B (H)	Reference	#4 - <u>34.0</u> db
Combined	AT LEAST 1.5 db Equal to or less than Rec A or Rec B	<u>4.0</u> db
5. RECEIVER PILOT TONE
6. ANTENNA SYSTEM VSWR

Max. 1.40 \pm 1.5 MC 1.3
AT CENTER
DATE 8 June 63
TESTER B. S. [signature]
SUPERVISOR R. S. [signature]
QUALITY ASSURANCE B. S. [signature]

LRP 5-28

FEDERAL ELECTRIC CORPORATION

BR 11/13

BIG RALLY II PROJECT

DATA SHEET

AN/MRC-85 STATION TEST

STATION 1.1DTransmission Patch: Station 1.1R to Station 1.1D

1. RECEIVER GAIN

EXPECTED

ACTUAL

~~RF Amplifier and Converter~~

Minimum 40 db _____ db

Parametric Amplifier & Converter

Minimum 33 db N/A db

2. RECEIVER SENSITIVITY

Signal Required Paramp.

Max. ^{2.5}3uv 2.35 uv~~For 20 db Quieting RF Amp.~~

Max. 4uv _____ uv

3. DC CONTROL VOLTAGE

DC Control Voltage

-35 volts \pm 3.5 - 3.5 volts

4. DIVERSITY COMBINER

Receiver Outputs (Vertical) \pm 2 db of each other #1

Rec A

4.0 db

Rec B

4.5 dbReceiver Outputs (Horizontal) \pm 2 db of each other #24.0 db4.5 db

Receiver A (V)

Reference

#1

34.0 db

Receiver B (V)

Reference

#13

35.5 db

Combined

AT least 1.5 db

Equal to or less

than Rec A or Rec B

2.15 db

Receiver A (H)

Reference

#12

34.5 db

Receiver B (H)

Reference

#14

34.0 db

Combined

AT least 1.5 db

Equal to or less

than Rec A or Rec B

2.0 db

5. RECEIVER PILOT TONE

2.5 Initials

6. ANTENNA SYSTEM VSWR

Max. 1.40 \pm 1.5 MC

AT CENTER

1.34

DATE

3 June 63

TESTER

R. E. H. H. H.

SUPERVISOR

R. E. H. H. H.

QUALITY ASSURANCE

R. E. H. H. H.

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT

BR 11/13
Rect 3
S/N 033.

DATA SHEET

AN/MRC-85 STATION TEST

STATION 1, D.

Transmission Patch: Station 1, R. to Station 1, D.

1. RECEIVER GAIN

EXPECTED

ACTUAL

~~RF Amplifier and Converter~~

Minimum 40 db _____ db

Parametric Amplifier & Converter

Minimum 33 db N/A db

2. RECEIVER SENSITIVITY

Signal Required Paramp.

Max. ^{2.5}~~3uv~~ 1.85 uv

~~For 20 db Quieting RF Amp.~~

Max. 4uv _____ uv

3. DC CONTROL VOLTAGE

DC Control Voltage

-35 volts \pm 3.5 35 volts

4. DIVERSITY COMBINER

Receiver Outputs (Vertical) \pm 2 db of each other 1 Rec A 4.0 db 3 Rec B 4.5 db

Receiver Outputs (Horizontal) \pm 2 db of each other 2 4.0 db 4 4.5 db

Receiver A (V) Reference 1 34.0 db

Receiver B (V) Reference 1 35.5 db

Combined AT least 1.5 db Equal to or less 2.25 db

Receiver A (H) Reference 2 34.75 db

Receiver B (H) Reference 2 34.0 db

Combined AT least 1.5 db Equal to or less 2.0 db

5. RECEIVER PILOT TONE

125 Initials

6. ANTENNA SYSTEM VSWR

Max. 1.40 \pm 15 MC 1.31

DATE 8 June 65

TESTER P. E. Jones

SUPERVISOR P. E. Jones

QUALITY ASSURANCE P. E. Jones

ID-E

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET

AN/MRC-85 STATION TEST

BR 11/13

REC #14

S/N 003

STATION 1DTransmission Patch: Station 1R to Station 1D

1. RECEIVER GAIN

	EXPECTED	ACTUAL
RF Amplifier and Converter	Minimum 40 db	db
Parametric Amplifier & Converter	Minimum 33 db	<u>14/10</u> db

2. RECEIVER SENSITIVITY

Signal Required Paramp.	Max. <u>2.5</u> 3.0 uv	<u>1.85</u> uv
For 20 db Quieting RF Amp.	Max. 4uv	uv

3. DC CONTROL VOLTAGE

DC Control Voltage -35 volts \pm 3.5 - 3.5 volts

4. DIVERSITY COMBINER

	Rec A	Rec B
Receiver Outputs (Vertical) \pm 2 db of each other	<u>4/1</u> <u>4.0</u> db	<u>4/3</u> <u>4.5</u> db
Receiver Outputs (Horizontal) \pm 2 db of each other	<u>4/2</u> <u>4.0</u> db	<u>4/4</u> <u>4.5</u> db
Receiver A (V)	Reference	<u>4/1</u> <u>34.0</u> db
Receiver B (V)	Reference	<u>4/3</u> <u>35.0</u> db
Combined	AT LEAST 1.5 db Equal to or less	<u>2.25</u> db
Receiver A (H)	Reference	<u>4/2</u> <u>34.75</u> db
Receiver B (H)	Reference	<u>4/4</u> <u>35.0</u> db
Combined	AT LEAST 1.5 db Equal to or less	<u>2.0</u> db

5. RECEIVER PILOT TONE 13.5 Initials

6. ANTENNA SYSTEM VSWR Max. 1.40 \pm 1.5 MC 1.3
AT CENTER

DATE 8 June 63
TESTER B. S. S.

SUPERVISOR P. E. H. H.

QUALITY ASSURANCE J. G. H.

SRP

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT

BR 11/13

RECEIVER 1-V

DATA SHEET

SERIAL # 029

AN/MRC-85 STATION TEST

STATION 1R-WTransmission Patch: Station 1 D-E to Station 1R-W

1. RECEIVER GAIN

EXPECTED

ACTUAL

RF-Amplifier and Converter—

Minimum 40 db _____ db

~~Parametric Amplifier & Converter~~

Minimum 33 db _____ db

2. RECEIVER SENSITIVITY

Signal Required Paramp. For 20db Quieting

Max. 2.5 μ v2.3 μ v

For 20-db Quieting RF-Amp.

Max. 4 μ v_____ μ v

3. DC CONTROL VOLTAGE

DC Control Voltage

-35 volts \pm 3.5

- 35 volts

4. DIVERSITY COMBINER

Receiver Outputs (Vertical) \pm 2 db of each other#1 Rec A 10.8 db / Rec B 10.5 dbReceiver Outputs (Horizontal) \pm 2 db of each other#4 9 db / #2 8.7 db

Receiver A (V) /

Reference

19.5 db

Receiver B (V) 3

Reference

20.1 db

Combined MIN 1.5 db NOISE IMPROVEMENT

At least 1.5
Equal to or less
than Rec A or Rec B2.5 db

Receiver A (H) 4

Reference

20 db

Receiver B (H) 2

Reference

17.5 db

Combined MIN 1.5 db NOISE IMPROVEMENT

At least 1.5
Equal to or less
than Rec A or Rec B2.0 db

5. RECEIVER PILOT TONE

RB 5 Initials6. ANTENNA SYSTEM VSWR at 50 \pm 7.5mc Max. 1.401.8:1DATE 11 JUNE 1963

TESTER

SUPERVISOR

QUALITY ASSURANCE

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT

BR 11/13

RECEIVER 2-H

DATA SHEET

SERIAL # 030

AN/MRC-85 STATION TEST

STATION IR-WTransmission Patch: Station ID-E to Station IR-W

1. RECEIVER GAIN

EXPECTED

ACTUAL

RF Amplifier and Converter

Minimum 40 db N/A db~~Parametric Amplifier & Converter~~Minimum 33 db N/A db

2. RECEIVER SENSITIVITY

Signal Required Paramp. For 20 db Quieting

Max. ^{2.5} ~~3~~ uv 1.9 uv

Far 20 db Quieting RF Amp.

Max. 4uv N/A uv

3. DC CONTROL VOLTAGE

DC Control Voltage

-35 volts \pm 3.5 -35 volts

4. DIVERSITY COMBINER

Receiver Outputs (Vertical) \pm 2 db of each otherRec A 10.6 db 10.5 dbReceiver Outputs (Horizontal) \pm 2 db of each otherRec A 9.0 db 8.7 db

Receiver A (V)

Reference 19.5 db

Receiver B (V)

Reference 20.0 db

Combined MIN 1.5 db NOISE IMPROVEMENT FIG.

Equal to or less than Rec A or Rec B 2.5 db

Receiver A (H)

Reference -20.0 db

Receiver B (H)

Reference -17.5 db

Combined MIN 1.5 db NOISE IMPROVEMENT FIG.

Equal to or less than Rec A or Rec B 2.0 db

5. RECEIVER PILOT TONE

RBS Initials6. ANTENNA SYSTEM VSWR at $f_0 \pm 1.5$ mc. Max. 1.401.19DATE 11 JUNE 1963TESTER M. LeuphartSUPERVISOR R. W. BrownQUALITY ASSURANCE R. B. SpearSRP

IR-W

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT

BR 11/13

RECEIVER 3-V

DATA SHEET

SERIAL # 031

AN/MRC-85 STATION TEST

STATION IR-WTransmission Patch: Station ID-E to Station IR-W

1. RECEIVER GAIN

	EXPECTED	ACTUAL
RF Amplifier and Converter	Minimum 40 db	<u>N/A</u> db
Parametric Amplifier & Converter	Minimum 33 db	<u>N/A</u> db

2. RECEIVER SENSITIVITY

Signal Required Param. For 20 db QUIETING Max. ^{2.5} 2.2 μ VFor 20 db Quieting RF Amp. Max. 4uv N/A uv

3. DC CONTROL VOLTAGE

DC Control Voltage -35 volts \pm 3.5 -35 volts

4. DIVERSITY COMBINER

Receiver Outputs (Vertical) \pm 2 db of each other #1 Rec A 10.3 db #3 Rec B 10.5 dbReceiver Outputs (Horizontal) \pm 2 db of each other #4 9.0 db #2 9.7 dbReceiver A (V) Reference 19.5 dbReceiver B (V) Reference 20.0 dbCombined MIN 1.5 db NOISE IMPROVEMENT Equal to or less than Rec A or Rec B 2.5 dbReceiver A (H) Reference 20.0 dbReceiver B (H) Reference 19.5 dbCombined MIN 1.5 db NOISE IMPROVEMENT Equal to or less than Rec A or Rec B 2.0 db

5. RECEIVER PILOT TONE

RA'S Initials6. ANTENNA SYSTEM VSWR AT 50 \pm 1.5 mc. Max. 1.402.0:1DATE 11 JUNE 1963TESTER M. LeiphartSUPERVISOR R. W. SmithQUALITY ASSURANCE R. B. Selov

ARP 5-34

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT

BR 11/13

RECEIVER 4-11

DATA SHEET

SERIAL # 032

AN/MRC-85 STATION TEST

STATION IR-W

Transmission Patch: Station ID-E to Station IR-W

1. RECEIVER GAIN

	EXPECTED	ACTUAL
RF Amplifier and Converter	Minimum 40 db	<u>NA</u> db
Parametric Amplifier & Converter	Minimum 33 db	<u>NA</u> db

2. RECEIVER SENSITIVITY

Signal Required Paramp. for 20db QUIETING	Max. ^{2.5} 3 uv	<u>2.4</u> uv
For 20 db Quieting RF Amp.	Max. 4uv	<u>NA</u> uv

3. DC CONTROL VOLTAGE

DC Control Voltage -35 volts ± 3.5 -35 volts

4. DIVERSITY COMBINER

	1 Rec A	Rec B
Receiver Outputs (Vertical) ± 2 db of each other	#4 <u>10.8</u> db	#3 <u>10.5</u> db
Receiver Outputs (Horizontal) ± 2 db of each other	#4 - <u>9</u> db	#2 - <u>8.7</u> db
Receiver A (V) 1	Reference	<u>-19.5</u> db
Receiver B (V) 3	Reference	<u>-20</u> db
Combined MIN 1.5 db NOISE IMPROVEMENT FIG.	Equal to or less than Rec A or Rec B	<u>2.5</u> db
Receiver A (H) 4	Reference	<u>-20</u> db
Receiver B (H) 2	Reference	<u>-17.5</u> db
Combined MIN. 1.5 DB NOISE IMPROVEMENT FIG.	Equal to or less than Rec A or Rec B	<u>2.0</u> db

5. RECEIVER PILOT TONE RBS Initials

6. ANTENNA SYSTEM VSWR at 50 ± 1.5mc Max. 1.40 1.23.1

DATE 12 JUNE 1963
TESTER [Signature]
SUPERVISOR [Signature]
QUALITY ASSURANCE [Signature]

IR-E

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT

BR 11/13

RECEIVER 1-V
SERIAL 017

DATA SHEET
AN/MRC-85 STATION TEST

STATION 1R-E

Transmission Patch: Station 1C-W to Station 1R-E

1. RECEIVER GAIN

	EXPECTED	ACTUAL
RF Amplifier and Converter	Minimum 40 db	<u>NA</u> db
Parametric Amplifier & Converter	Minimum 33 db	<u>35</u> db
2. RECEIVER SENSITIVITY

Signal Required Paramp. For 20db Quieting	Max. ^{2.5} 3uv	<u>2.4</u> uv
For 20 db Quieting RF Amp.	Max. 4uv	<u>NA</u> uv
3. DC CONTROL VOLTAGE

DC Control Voltage	-35 volts <u>+ 3.5</u> - <u>36</u> volts
--------------------	--
4. DIVERSITY COMBINER

Receiver Outputs (Vertical) ± 2 db of each other	<table border="0"> <tr> <td>± 1 Rec A</td> <td><u>+ 5.1</u> db</td> <td>± 3 Rec B</td> <td><u>+ 3.8</u> db</td> </tr> </table>	± 1 Rec A	<u>+ 5.1</u> db	± 3 Rec B	<u>+ 3.8</u> db
± 1 Rec A	<u>+ 5.1</u> db	± 3 Rec B	<u>+ 3.8</u> db		
Receiver Outputs (Horizontal) ± 2 db of each other	<table border="0"> <tr> <td>± 12</td> <td><u>+ 4.5</u> db</td> <td>± 4</td> <td><u>+ 5</u> db</td> </tr> </table>	± 12	<u>+ 4.5</u> db	± 4	<u>+ 5</u> db
± 12	<u>+ 4.5</u> db	± 4	<u>+ 5</u> db		
Receiver A (V) ± 1	Reference <u>- 24.9</u> db				
Receiver B (V) ± 3	Reference <u>- 26.2</u> db				
Combined MIN 1.5 db NOISE IMPROVEMENT	Equal to or less than Rec A or Rec B <u>- 2.75</u> db				
Receiver A (H) ± 2	Reference <u>- 25.3</u> db				
Receiver B (H) ± 4	Reference <u>- 25</u> db				
Combined MIN 1.5 db NOISE IMPROVEMENT	Equal to or less than Rec A or Rec B <u>- 2.5</u> db				
5. RECEIVER PILOT TONE

	<u>RBS</u> Initials
--	---------------------
6. ANTENNA SYSTEM VSWR

Max. 1.40	<u>1.57</u>
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DATE 14 JUNE 1968TESTER E. HallenSUPERVISOR Robert W. LewisQUALITY ASSURANCE R.B. Swann

DRP

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT

BR 11/13

RECEIVER 2-H
SERIAL 018

DATA SHEET
AN/MRC-85 STATION TEST

STATION IR-E

Transmission Patch: Station IC-W to Station IR-E

1. RECEIVER GAIN EXPECTED ACTUAL

RF Amplifier and Converter

Minimum 40 db NA db

Parametric Amplifier & Converter

Minimum 33 db 39 db

2. RECEIVER SENSITIVITY

Signal Required Paramp. For 20 db Quieting Max. ^{2.5} 3uv 2.0 uvFar 20 db Quieting ~~RE Amp.~~ WITH CONVERTER ⁵ Max. 4uv 4.8 uv

3. DC CONTROL VOLTAGE

DC Control Voltage

-35 volts \pm 3.5 -35 volts

4. DIVERSITY COMBINER

Receiver Outputs (Vertical) \pm 2 db of each other

Rec A	Rec B
<u>+5.1</u> db	<u>+3.8</u> db

Receiver Outputs (Horizontal) \pm 2 db of each other

<u>+4.5</u> db	<u>+5</u> db
----------------	--------------

Receiver A (V)

Reference -24.9 db

Receiver B (V)

Reference -26.2 db

Combined

MIN. 1.5 db NOISE IMPROVEMENT

Equal to or less than Rec A or Rec B -2.75 db

Receiver A (H)

Reference -25.5 db

Receiver B (H)

Reference -25 db

Combined

MIN. 1.5 db NOISE IMPROVEMENT

Equal to or less than Rec A or Rec B -2.5 db

5. RECEIVER PILOT TONE

RES Initials

6. ANTENNA SYSTEM VSWR

Max. 1.40 1.40

NOTE: PARAMETRIC AMPLIFIER #2
DOWN. DATA RECORDED
USING PARAMETRIC AMP #1

DATE 14 JUNE 1963
TESTER E. H. H. H.
SUPERVISOR Robert W. H. H.
QUALITY ASSURANCE R. B. S. S.

ARP

5-37

BIG RALLY II PROJECT

 RECEIVER 3-V
 SERIAL 019

DATA SHEET

AN/MRC-85 STATION TEST

STATION 1 R-ETransmission Patch: Station 1 C-W to Station 1 R-E

1. RECEIVER GAIN

EXPECTED

ACTUAL

RF Amplifier and Converter

Minimum 40 db N.A. db

Parametric Amplifier & Converter

Minimum 33 db 35 db

2. RECEIVER SENSITIVITY

Signal Required Paramp. for 20 db QUIETING

Max. ^{2.5} 3uv 2.5 uv

For 20 db Quieting RF Amp.

Max. 4uv N.A. uv

3. DC CONTROL VOLTAGE

DC Control Voltage

-35 volts \pm 3.5 -34 volts

4. DIVERSITY COMBINER

Receiver Outputs (Vertical) \pm 2 db of each other

Rec A

Rec B

+5.1 db+3.8 dbReceiver Outputs (Horizontal) \pm 2 db of each other+4.5 db+5 db

Receiver A (V)

Reference

-24.9 db

Receiver B (V)

Reference

-26.2 db

Combined

MIN 1.5 db NOISE IMPROVEMENT

Equal to or less than Rec A or Rec B

-2.75 db

Receiver A (H)

Reference

-25.5 db

Receiver B (H)

Reference

-25 db

Combined

MIN 1.5 db NOISE IMPROVEMENT

Equal to or less than Rec A or Rec B

-2.5 db

5. RECEIVER PILOT TONE

RF Initials

6. ANTENNA SYSTEM VSWR

Max. 1.40

1.40DATE 14 JUNE 1963TESTER E. H. AllenSUPERVISOR Robert W. AllenQUALITY ASSURANCE R.B. SparARP5-38

IR-E

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT

BR 11/13

RECEIVER 4-H

DATA SHEET

SERIAL 020

AN/MRC-85 STATION TEST

STATION IR-ETransmission Patch: Station IC-Wto Station IR-E

1. RECEIVER GAIN

EXPECTED

ACTUAL

RF Amplifier and Converter

Minimum 40 db NA db

Parametric Amplifier & Converter

Minimum 33 db 40 db

2. RECEIVER SENSITIVITY

Signal Required Paramp. For 20 db QUIETING Max. ^{2.5} 3uv2.4 uv

For 20 db Quieting RF Amp.

Max. 4uv NA uv

3. DC CONTROL VOLTAGE

DC Control Voltage

-35 volts \pm 3.5 -37 volts

4. DIVERSITY COMBINER

Receiver Outputs (Vertical) \pm 2 db of each otherRec A
+5.1 dbRec B
+3.8 dbReceiver Outputs (Horizontal) \pm 2 db of each other+4.5 db+5 db

Receiver A (V)

Reference

-24.7 db

Receiver B (V)

Reference

-26.2 db

Combined

MIN 1.5 db NOISE
IMPROVEMENT.Equal to or less
than Rec A or Rec B-2.75 db

Receiver A (H)

Reference

-25.5 db

Receiver B (H)

Reference

-25 db

Combined

MIN 1.5 db NOISE
IMPROVEMENT.Equal to or less
than Rec A or Rec B-2.5 db

5. RECEIVER PILOT TONE

RBS Initials

6. ANTENNA SYSTEM VSWR

Max. 1.40

1.57

DATE

14 JUNE 1963

TESTER

E. H. Allen

SUPERVISOR

Robert Westling

QUALITY ASSURANCE

R.B. Spear

ARP

5-39

FEDERAL ELECTRIC CORPORATION

BR 11/13

BIG RALLY II PROJECT

DATA SHEET

AN/MRC-85 STATION TEST

RECEIVER

STATION IC WESTTransmission Patch: Station IRto Station IC

1. RECEIVER GAIN

EXPECTED

Receiver

2

3

4

ACTUAL

RF Amplifier and Converter

IF#2

Minimum 40 db 57.66.4 68.2 db

Parametric Amplifier & Converter

IF#1

Minimum 33 db 32.2 38.2 42.8 db

2. RECEIVER SENSITIVITY

Signal Required Paramp.

Max. 3uv

1.81.91.6

uv

For 20 db Quieting RF Amp.

Max. 4uv

uv

3. DC CONTROL VOLTAGE

DC Control Voltage

-35 volts + 3.5 -35 -35 -35 volts

4. DIVERSITY COMBINER

Receiver Outputs (Vertical) \pm 2 db of each other #1

Rec A

+4.5

db #3

Rec B

5.25

db

Receiver Outputs (Horizontal) \pm 2 db of each other #2+4.5

db #4

5.00

db

Receiver A (V)

Reference

db

Receiver B (V)

Reference

db

Combined

At least 1.5

Equal to or less

than Rec A or Rec B

db

Receiver A (H)

Reference

-25

db

Receiver B (H)

Reference

-25

db

Combined

At least 1.5 db

Equal to or less

than Rec A or Rec B

-21

db

5. RECEIVER PILOT TONE

Initials

6. ANTENNA SYSTEM VSWR

Max. 1.40

Antenna #1 2.1 ✓
 Antenna #2 2.2 ✓
 Antenna #3 1.22 ✓
 Antenna #4 2.15 ✓

DATE 16 JUNE 63TESTER E. J. ParkerSUPERVISOR F. J. DelaneyQUALITY ASSURANCE William H. MillerGEEIA Robert A. Logler

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT

BR 11/13

DATA SHEET

AN/MRC-85 STATION TEST

STATION IC

Transmission Patch: Station GK to Station IC

1. RECEIVER GAIN

RF Amplifier and Converter IF # 1 EXPECTED Minimum 40 db 34.5 33 31 35 db

~~Parametric Amplifier & Converter~~ IF # 2 EXPECTED Minimum ~~35~~ db 63 58 60 63 db
50

2. RECEIVER SENSITIVITY

Signal Required Paramp. Max. 3uv N / A uv

For 20 db Quieting RF Amp. Max. 4uv 3.2 2.8 3.5 3.5 uv

3. DC CONTROL VOLTAGE

DC Control Voltage -35 volts + 3.5 35 35 35 35 volts

4. DIVERSITY COMBINER

Receiver Outputs (Vertical) ± 2 db of each other Rec 1 +10.5 db Rec 3 +11 db

Receiver Outputs (Horizontal) ± 2 db of each other Rec #2 +10.75 db Rec #4 +10.0 db

Receiver A (V) Reference - 20.5 db

Receiver B (V) Reference -24.0 db

Combined At least 1.5 db Equal to or less than Rec A or Rec B 2.5 db

Receiver A (H) Reference -18 db

Receiver B (H) Reference -18 db

Combined At least 1.5 db Equal to or less than Rec A or Rec B 2.5 db

5. RECEIVER PILOT TONE

RS Initials

6. ANTENNA SYSTEM VSWR

Max. 1.40

Rec. # 1 2 3 4
1.40 1.70 1.25 1.7

DATE 23 JUNE 63

TESTER R. Shodil

SUPERVISOR F. H. Stoyard

QUALITY ASSURANCE William F. Felt

GEEIA Robert A. Taylor

FEDERAL ELECTRIC CORPORATION

BR 11/13

BIG RALLY II PROJECT

DATA SHEET

AN/MRC-85 STATION TEST

STATION G.K.

Transmission Patch:

Station G.K.to Station 1. P.

1. RECEIVER GAIN

RF Amplifier and Converter

Parametric Amplifier & Converter

2. RECEIVER SENSITIVITY

Signal Required Paramp.

For 20 db Quieting RF Amp.

3. DC CONTROL VOLTAGE

DC Control Voltage

4. DIVERSITY COMBINER

Receiver Outputs (Vertical) \pm 2 db of each otherReceiver Outputs (Horizontal) \pm 2 db of each other

Receiver A (V)

Receiver B (V)

Combined

Receiver A (H)

Receiver B (H)

Combined

5. RECEIVER PILOT TONE

6. ANTENNA SYSTEM VSWR

IF #2 With EXPECTED ACTUAL
 Without Paramp. 40 56 42 43
 Minimum 40 db 33 30 33.5 34db

IF #1

Minimum 33 db N/A. db

2.5uv

Max. 30v

Max. 4uv

N/A. uv
 2.75 1.15 2.15 3.1
~~3~~ ~~25~~ ~~3~~ ~~30~~ uv

31 33 34.5 33.3
 -35 volts \pm 3.5 ~~3.5~~ ~~34.3~~ ~~34.5~~ ~~34.8~~ volts

Rec A 9.5
 #1 ~~10~~ db #3 Rec B ~~10~~ db

#2 11 db #4 10 db

Reference #1 -20 db

Reference #3 -20 db

Equal to or less
 than Rec A or Rec B -22.5 db

Reference #2 -20.5 db

Reference #4 18.5 db

Equal to or less
 than Rec A or Rec B -22.5 db

BB. Initials

Max. 1.40 1.57 1.76 1.95 1.31

DATE 26-JUNE, 63

TESTER BB.

SUPERVISOR BB.

QUALITY ASSURANCE BB.

FEDERAL ELECTRIC CORPORATION

BR 11/13

BIG RALLY II PROJECT

DATA SHEET

AN/MRC-85 STATION TEST

STATION G.K.Transmission Patch: Station G.K. to Station G.A.

1. RECEIVER GAIN

EXPECTED

#1 #2 #3 #4

~~RF Amplifier and Converter~~

Minimum 40 db

db

Parametric Amplifier & Converter

Minimum 33 db

db

2. RECEIVER SENSITIVITY

Signal Required Paramp.

Max. 2uv

uv

~~For 20 db Quieting RF Amp.~~

Max. 4uv

uv

3. DC CONTROL VOLTAGE

DC Control Voltage

-35 volts \pm 3.5 -36.2 -35 -35 volts

4. DIVERSITY COMBINER

Receiver Outputs (Vertical) \pm 2 db of each other

#1 Rec A +11 db #4 Rec B +11 db

Receiver Outputs (Horizontal) \pm 2 db of each other

#2 +2 db #3 +2 db

Receiver A (V)

Reference #1 -20.5 db

Receiver B (V)

Reference #4 -21.5 db

Combined 1.5db NOISE IMPROVEMENT

Equal to or less than Rec A or Rec B -23 db

Receiver A (H)

Reference #2 -23.5 db

Receiver B (H)

Reference #3 -23.5 db

Combined 1.5db NOISE IMPROVEMENT

Equal to or less than Rec A or Rec B -25 db

5. RECEIVER PILOT TONE

6. ANTENNA SYSTEM VSWR FROM OPER. FREQ. Max. 1.40 \pm 15 MRS: 1.25 1.27 1.31 1.40

DATE 3 July 63

TESTER

SUPERVISOR

QUALITY ASSURANCE

Initials BCB

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT

BR 11/13

DATA SHEET
AN/MRC-85 STATION TEST

STATION GA MRC-85Transmission Patch: Station GA to Station GK

1. RECEIVER GAIN

EXPECTED

ACTUAL

~~RF Amplifier and Converter~~~~Minimum 40 db~~ db

Parametric Amplifier & Converter

1V	2H	3V	4H
39	39	34	36.5

 db

2. RECEIVER SENSITIVITY

Signal Required Paramp.

Max. 3.5 ^{2.5} uV	1.6	1.9	1.9	1.7

 uv
~~For 20 db Quieting RF Amp.~~

Max. 4 uV	X	X	X	X

 uv

3. DC CONTROL VOLTAGE

DC Control Voltage

-35 volts \pm 3.5 -35 volts

4. DIVERSITY COMBINER

Receiver Outputs (Vertical) \pm 2 db of each other

Rec A 1	Rec B 3
2.7 db	3.8 db

Receiver Outputs (Horizontal) \pm 2 db of each other

2	4
4.5 db	4.5 db

Receiver A (V) 1

Reference 26.7 db

Receiver B (V) 3

Reference 26.3 db

Combined

MINIMUM 1.5 db
IMPROVEMENTEqual to or less
than Rec A or Rec B 2.8 db

Receiver A (H) 2

Reference 25.5 db

Receiver B (H) 4

Reference 25.5 db

Combined

MINIMUM 1.5 db
IMPROVEMENTEqual to or less
than Rec A or Rec B 2.7 db

5. RECEIVER PILOT TONE

WDT Initials

6. ANTENNA SYSTEM VSWR

Max. 1.40	1V	2H	3V	4H
	1.25	1.18	1.25	1.57

DATE 9 July 1963TESTER M. R. LatoSUPERVISOR Paul W. W. W.QUALITY ASSURANCE Robert A. Taylor

GEEIA

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 OVERALL TEST

BRII/14

STATION 1, D.

Transmission Path: From 1, D. Station to 1, R. Station

Exciter Serial No. #1, S/N 014, #2, S/N 013

Receiver Serial No. Rec. A# 1 (VERT.), Rec. B# 4 (HORIZ.)

Power Amplifier Serial No. #1 S/N 016, #2 S/N 014

Exc. #1, P.A. #1,
Rec. #1, (VERT.)

Exc. #2, P.A. #2,
Rec. #4, (HORIZ.)

1. SYSTEM INTERMODULATION

Intermodulation Frequency

EXPECTED ACTUAL
NPR ↓ Rec. A Rec. B

15 KC

Minimum NPR-4546
~~Maximum -55 dbm~~ -55/56 *dbm -56/62 *dbm

55 KC

~~Maximum -55 dbm~~ -55/56 *dbm -61/41 *dbm

80 KC

~~Maximum -55 dbm~~ -55/58 *dbm -59/63 *dbm

* RESIDUAL NOISE

2. RADIO BASEBAND FREQUENCY RESPONSE

EXPECTED ACTUAL

Frequency

Rec. A

Rec. B

12 KC

-10.9 dbm -10.8 dbm

20 KC

-2 + 1 db -10.2 dbm -10 dbm

30 KC

with respect -10 dbm -10 dbm

40 KC

to 30 KC level -10 dbm -10 dbm

50 KC

-10.1 dbm -10.2 dbm

60 KC

-10.2 dbm -10.5 dbm

70 KC

-10 dbm -10 dbm

80 KC

+0.25 db -10 dbm -10 dbm

90 KC

with respect -10 dbm -10 dbm

100 KC

to 90 KC level -10 dbm -9.4 dbm

110 KC

-10.1 dbm -10 dbm

120 KC

-10.1 dbm -10 dbm

DATE 8-JUNE-62

TESTER B. Surpin

SUPERVISOR R. E. Johnson

QUALITY ASSURANCE B. E. K. N.

SRP

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 OVERALL TEST

BRII/14

STATION IR-WEST

Transmission Path: From IR-W Station to ID-E Station

Exciter Serial No. 016 1-V

Receiver Serial No. Rec. A# 029 1-V, Rec. B# 031 3-V

Power Amplifier Serial No. 015 1-V

1. SYSTEM INTERMODULATION

Intermodulation Frequency	EXPECTED	ACTUAL	
	NPR	Rec. A #1	Rec. B #3
15 KC	Minimum NPR-4546		
	Maximum -55 dbm	<u>-58</u> dbm	<u>-58</u> dbm
55 KC	Maximum -55 dbm	<u>-56</u> dbm	<u>-57</u> dbm
80 KC	Maximum -55 dbm	<u>-52</u> dbm	<u>-49</u> dbm

2. RADIO BASEBAND FREQUENCY RESPONSE

Frequency	EXPECTED	ACTUAL	
		Rec. A #1	Rec. B #3
12 KC		<u>-10.5</u> dbm	<u>-10.5</u> dbm
20 KC	-2 + 1 db	<u>-10</u> dbm	<u>-10</u> dbm
30 KC	with respect	<u>-10</u> dbm	<u>-10</u> dbm
40 KC	to 30 KC level	<u>-10</u> dbm	<u>-9.8</u> dbm
50 KC		<u>-10</u> dbm	<u>-9.9</u> dbm
60 KC		<u>-10.2</u> dbm	<u>-10.1</u> dbm
70 KC		<u>-10</u> dbm	<u>-10</u> dbm
80 KC	+0.25 db	<u>-10</u> dbm	<u>-10</u> dbm
90 KC	with respect	<u>-10</u> dbm	<u>-10</u> dbm
100 KC	to 90 KC level	<u>-10</u> dbm	<u>-10</u> dbm
110 KC		<u>-10</u> dbm	<u>-10</u> dbm
120 KC		<u>-10</u> dbm	<u>-10</u> dbm

DATE JUNE 12 1963

TESTER M. Lippert

SUPERVISOR R. W. King

QUALITY ASSURANCE R. B. Spear

VRP

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 OVERALL TEST

BRII/14

STATION 1R-W

Transmission Path: From 1R-W Station to 1D-E Station

Exciter Serial No. 015 2-H

Receiver Serial No. Rec. A# 030 2-H, Rec. B# 032 4-H

Power Amplifier Serial No. 016 2-H

1. SYSTEM INTERMODULATION

Intermodulation Frequency

EXPECTED
NPR

ACTUAL

Rec. A 2-H Rec. B 4-H

15 KC

Minimum NPR-4546

~~Maximum -55 dbm~~ -61 dbm -58 dbm

55 KC

~~Maximum -55 dbm~~ -57 dbm -56 dbm

80 KC

~~Maximum -55 dbm~~ -52 dbm -52 dbm

2. RADIO BASEBAND FREQUENCY RESPONSE

EXPECTED

ACTUAL

Frequency

Rec. A 2-H Rec. B 4-H

12 KC

-10.7 dbm -10.5 dbm

20 KC

-2 + 1 db -10.1 dbm -10 dbm

30 KC

with respect -10 dbm -10 dbm

40 KC

to 30 KC level -10.3 dbm -10.4 dbm

50 KC

-10.7 dbm -10.8 dbm

60 KC

-11.2 dbm -11.5 dbm

70 KC

-10 dbm -9.8 dbm

80 KC

+0.25 db -10 dbm -9.8 dbm

90 KC

with respect -10 dbm -9.9 dbm

100 KC

to 90 KC level -10 dbm -10 dbm

110 KC

-10 dbm -10 dbm

120 KC

-10 dbm -10 dbm

DATE JUNE 12, 1963

TESTER M. Luephard

SUPERVISOR R. W. Wain

QUALITY ASSURANCE R. B. Spear

H R P

5-47

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 OVERALL TEST

BRII/14

STATION 1R-ETransmission Path: From 1R-E Station to 1C-W StationExciter Serial No. 009 2-HReceiver Serial No. Rec. A# 018 2-H, Rec. B# 020 4-HPower Amplifier Serial No. 010 2-H

1. SYSTEM INTERMODULATION

Intermodulation Frequency		EXPECTED NPR	2-H Rec. A	4-H Rec. B
<u>15</u> KC	<u>Minimum</u>	<u>NPR-45db</u>	<u>-52</u> dbm	<u>-52</u> dbm
<u>55</u> KC	<u>Maximum</u>	<u>-55 dbm</u>	<u>-53</u> dbm	<u>-55</u> dbm
<u>80</u> KC	<u>Maximum</u>	<u>-55 dbm</u>	<u>-54</u> dbm	<u>-57</u> dbm

2. RADIO BASEBAND FREQUENCY RESPONSE

Frequency		EXPECTED	2-H Rec. A	4-H Rec. B
12 KC			<u>-11.2</u> dbm	<u>-11.2</u> dbm
20 KC	-2 + 1 db		<u>-10.6</u> dbm	<u>-10.6</u> dbm
30 KC	with respect		<u>-10.3</u> dbm	<u>-10.3</u> dbm
40 KC	to 30 KC level		<u>-10.3</u> dbm	<u>-10.3</u> dbm
50 KC			<u>-10.2</u> dbm	<u>-10.3</u> dbm
60 KC			<u>-10.2</u> dbm	<u>-10.3</u> dbm
70 KC			<u>-10</u> dbm	<u>-10</u> dbm
80 KC	+0.25 db		<u>-10</u> dbm	<u>-10</u> dbm
90 KC	with respect		<u>-10</u> dbm	<u>-10</u> dbm
100 KC	to 90 KC level		<u>-10</u> dbm	<u>-10</u> dbm
110 KC			<u>-10</u> dbm	<u>-10.1</u> dbm
120 KC			<u>-10</u> dbm	<u>-10.1</u> dbm

DATE 16 JUNE 1963TESTER E. HallSUPERVISOR R. B. SearQUALITY ASSURANCE R. B. Sear

RP

5-48

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 OVERALL TEST

BRII/14

STATION 1 R-E

Transmission Path: From 1 R-E Station to 1 C-W Station

Exciter Serial No. 010 1-V

Receiver Serial No. Rec. A# 017 1-V, Rec. B# 019 3-V

Power Amplifier Serial No. 010 009 1-V

1. SYSTEM INTERMODULATION

Intermodulation Frequency		EXPECTED NPR	1-V ACTUAL Rec. A	Rec. B Rec. B-3V
15 KC	15 KC	Minimum -55 dbm	-53 dbm	-55 dbm
55 KC	55 KC	Maximum -55 dbm	-50 dbm	-60 dbm
80 KC	80 KC	Maximum -55 dbm	-50 dbm	-60 dbm

2. RADIO BASEBAND FREQUENCY RESPONSE

Frequency	EXPECTED	ACTUAL	
		Rec. A-1-V	Rec. B-3V
12 KC		-11 dbm	-10.8 dbm
20 KC	-2 + 1 db	-10.3 dbm	-10.3 dbm
30 KC	with respect	-10 dbm	-10 dbm
40 KC	to 30 KC level	-10 dbm	-10 dbm
50 KC		-10 dbm	-10 dbm
60 KC		-10.2 dbm	-10.2 dbm
70 KC		-10 dbm	-10 dbm
80 KC	+0.25 db	-10 dbm	-10 dbm
90 KC	with respect	-10 dbm	-10 dbm
100 KC	to 90 KC level	-10 dbm	-10 dbm
110 KC		-10 dbm	-10 dbm
120 KC		-10 dbm	-10.1 dbm

DATE 16 June 1963

TESTER E. W. H. Allen

SUPERVISOR Robert Westenberg

QUALITY ASSURANCE R. B. Spear

LRP

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 OVERALL TEST

BRII/14

STATION IC WEST

Transmission Path: From IC Station to IR Station

Exciter Serial No. 003 # 2

Receiver Serial No. Rec. ³~~A~~# 007, Rec. ⁴~~B~~# 008

Power Amplifier Serial No. _____

1. SYSTEM INTERMODULATION

EXPECTED
NPR

³ ACTUAL ⁴

Intermodulation Frequency

15 KC

Minimum NPR-4546
~~Maximum -55 dbm~~

Rec. A Rec. B
-56 dbm -54 dbm

55 KC

~~Maximum -55 dbm~~

-56 dbm -54 dbm

80 KC

~~Maximum -55 dbm~~

-55 dbm -53 dbm

2. RADIO BASEBAND FREQUENCY RESPONSE

EXPECTED

ACTUAL ⁴

Frequency

Rec. A

Rec. B

12 KC

-12.0 dbm

-10.5 dbm

20 KC

-2 + 1 db

-10.5 dbm

-10.0 dbm

30 KC

with respect

-10.0 dbm

-10.0 dbm

40 KC

to 30 KC level

-10.0 dbm

-10.25 dbm

50 KC

-10.0 dbm

-10.25 dbm

60 KC

-10.0 dbm

-10.25 dbm

70 KC

-10.0 dbm

-10.25 dbm

80 KC

+0.25 db

-10.0 dbm

-10.25 dbm

90 KC

with respect

-10.0 dbm

-10.25 dbm

100 KC

to 90 KC level

-10.0 dbm

-10.5 dbm

110 KC

-10.0 dbm

-10.5 dbm

120 KC

-10.25 dbm

-10.5 dbm

DATE 16 June 1963

TESTER T. D. Dyer

SUPERVISOR F. A. Dyer

QUALITY ASSURANCE William R. Zet

EEETA Albert O. Zet

IC-E

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 OVERALL TEST

BR11/14

STATION IC

Transmission Path: From IC Station to IGK Station

Exciter Serial No. EXC.# 1
EXC.# 2

Receiver Serial No. Rx.#1 Rec. A# Rx.#2 1/2, Rec. B# Rx.#4

Power Amplifier Serial No. Amp.#1
Amp.#2

1. SYSTEM INTERMODULATION

			EXPECTED NPR	ACTUAL	
Rx. #1	Intermodulation Frequency	Rx. #3		Rec. A#2	Rec. B#4
-50.0	-50.5 - 15 KC		<u>Minimum NPR-45db</u>		
-50.5	-50.0 - 55 KC		<u>Maximum -55 dbm</u>	<u>-53 dbm</u>	<u>-52 dbm</u>
-51.0	-51.5 - 80 KC		<u>Maximum -55 dbm</u>	<u>-52 dbm</u>	<u>-50 dbm</u>
			<u>Maximum -55 dbm</u>	<u>-50.5 dbm</u>	<u>-50 dbm</u>

2. RADIO BASEBAND FREQUENCY RESPONSE

			EXPECTED	ACTUAL	
Rx. #1	Rx. #3	Frequency		Rec. A#2	Rec. B#4
-10.9	-10.9	12 KC		<u>-11 dbm</u>	<u>-11 dbm</u>
-10.2	-10.1	20 KC		<u>-10.3 dbm</u>	<u>-10.2 dbm</u>
-10.0	-9.75	30 KC	-2 + 1 db	<u>-10.25 dbm</u>	<u>-10.0 dbm</u>
-10.0	-9.5	40 KC	with respect	<u>-10.3 dbm</u>	<u>-10.0 dbm</u>
-10.2	-9.8	50 KC	to 30 KC level	<u>-10.4 dbm</u>	<u>-10.0 dbm</u>
-10.4	-9.8	60 KC		<u>-10.6 dbm</u>	<u>-9.9 dbm</u>
-10.0	-9.75	70 KC		<u>-10.1 dbm</u>	<u>-9.9 dbm</u>
-10.0	-9.75	80 KC	+0.25 db	<u>-10.2 dbm</u>	<u>-9.9 dbm</u>
-10.0	-9.75	90 KC	with respect	<u>-10.25 dbm</u>	<u>-10.0 dbm</u>
-10.0	-9.75	100 KC	to 90 KC level	<u>-10.4 dbm</u>	<u>-10.0 dbm</u>
-10.0	-9.75	110 KC		<u>-10.25 dbm</u>	<u>-9.9 dbm</u>
-10.2	-9.75	120 KC		<u>-10.4 dbm</u>	<u>-9.8 dbm</u>

DATE 22 JUNE 63

TESTER P. J. [Signature]

SUPERVISOR F. A. [Signature]

QUALITY ASSURANCE William R. [Signature]

GEEIA Robert D. [Signature]

616-0

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 OVERALL TEST

BRII/14

STATION G.K.

Transmission Path: From G.K. Station to I.C. Station

Exciter Serial No. ^{#1} 001 ^{#2} 005

Receiver Serial No. Rec. ^{#1} 002 , Rec. ^{#2} 004

Power Amplifier Serial No. ^{#1} 005 ^{#2} 001

1. SYSTEM INTERMODULATION

Intermodulation Frequency

15 KC

55 KC

80 KC

EXPECTED
NPR

Minimum NPR-45dB

Maximum 55 dbm

Maximum 55 dbm

Maximum 55 dbm

MOD 1
EXC 2
MOD 2
EXC 1
PA2 ACTUAL PA 1

Rec. A2

Rec. B1 *

56 dbm

52 dbm 58

53 dbm

47 dbm 53

53 dbm

49 dbm 52

2. RADIO BASEBAND FREQUENCY RESPONSE

MOD 2 EXC. 1 PA 1 REC 3	MOD 2 EXC. 1 PA 1 REC 1	MOD 1 EXC. 2 PA 2 REC 4	MOD 1 EXC. 2 PA 2 REC 2	Frequency
19.75	19.7	19.9	20.1	12 KC
19	19	19.3	19.4	20 KC
19	19	19	19	30 KC
18.75	18.9	18.8	19	40 KC
18.8	18.85	18.7	19	50 KC
18.8	18.7	18.6	19	60 KC
19.2	19.2	19.2	18.85	70 KC
19	19.1	19.5	18.9	80 KC
19	19	19	19	90 KC
18.85	19	18.9	19	100 KC
18.75	19	18.85	19	110 KC
18.75	19	18.75	19.1	120 KC

EXPECTED

ACTUAL

Rec. A

Rec. B

dbm

dbm

-2 + 1 db

dbm

dbm

with respect

dbm

dbm

to 30 KC level

dbm

dbm

dbm

dbm

dbm

dbm

dbm

dbm

+0.25 db

dbm

dbm

with respect

dbm

dbm

to 90 KC level

dbm

dbm

dbm

dbm

dbm

dbm

DATE 27 JUNE, 63

TESTER [Signature]

SUPERVISOR [Signature]

QUALITY ASSURANCE B. P. Boss

Readings taken w/meter calibrated for
600 Imp. Correction factor of 9db
has to be applied for correct reading
Ex. 18.75 Reading = 9.75 corrected.

* 29 JUNE, 63

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FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 OVERALL TEST

BRII/14

STATION G.K.

Transmission Path: From G.K. Station to G.A. Station

Exciter Serial No. 006 005

Receiver Serial No. Rec. A # 013 014, Rec. B # 3 4

Power Amplifier Serial No. 007-H 008-V

Mod. 1 Mod. 2
P.A. 1 P.A. 2
Exc. 1 Exc. 2

1. SYSTEM INTERMODULATION

Intermodulation Frequency

15 KC
55 KC
80 KC

EXPECTED
NPR

ACTUAL

Minimum NPR -45db
Maximum -55 dbm -54 dbm -58 dbm
Maximum -55 dbm -51 dbm -53 dbm
Maximum -55 dbm -55 dbm -51 dbm

2. RADIO BASEBAND FREQUENCY RESPONSE

Mod 2	Mod 2	Mod 1	Mod 1
PA 2	PA 2	PA 1	PA 1
Exc. 2	Exc. 2	Exc. 1	Exc. 1
Rec. 1	Rec. 1	Rec. 3	Rec. 2
-20	-20	-20	-20
-19		-19.2	-19.1
-19	-19	-19	-19
-19		-19	-19
-19		-19.1	-19.1
-19.2	-19.5	-19.1	-19.2
-19	-19	-19	-19
-19		-19	-19
-19	-19	-19	-19
-19		-19	-19
-19	-19	-19	-19

Frequency

12 KC
20 KC
30 KC
40 KC
50 KC
60 KC
70 KC
80 KC
90 KC
100 KC
110 KC
120 KC

EXPECTED

ACTUAL

Rec. A

Rec. B

-2 + 1 db
with respect
to 30 KC level
+0.25 db
with respect
to 90 KC level

dbm dbm
dbm dbm
dbm dbm
dbm dbm
dbm dbm
dbm dbm
dbm dbm
dbm dbm
dbm dbm
dbm dbm
dbm dbm

DATE 4 July 63

TESTER J. E. Smith

SUPERVISOR Russell E. Carter

QUALITY ASSURANCE W. E. Bess

Readings taken w/ meter calibrated for
- Exp. Correction factor of 9db
to be applied for correct reading
Ex. 18.75 Reading = 9.75 corrected.

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 OVERALL TEST

BRII/14

STATION GA MRC-85

Transmission Path: From GA Station to GK Station

Exciter Serial No. 011 2H

Receiver Serial No. Rec. A# 022 2H, Rec. B# 024 4H

Power Amplifier Serial No. 014 2H

1. SYSTEM INTERMODULATION

Intermodulation Frequency	EXPECTED	ACTUAL	
	NPR	Rec. A	Rec. B
15 KC	<i>Minimum NPR 45db</i>		
	Maximum -55 dbm	<u>-54 dbm</u>	<u>-55 dbm</u>
55 KC	Maximum -55 dbm	<u>-50 dbm</u>	<u>-50 dbm</u>
80 KC	Maximum -55 dbm	<u>-51 dbm</u>	<u>-51 dbm</u>

2. RADIO BASEBAND FREQUENCY RESPONSE

Frequency	EXPECTED	ACTUAL	
		Rec. A	Rec. B
12 KC		<u>-12.0 dbm</u>	<u>-10.7 dbm</u>
20 KC	-2 + 1 db	<u>-11.1 dbm</u>	<u>-10.0 dbm</u>
30 KC	with respect	<u>-10.6 dbm</u>	<u>-9.8 dbm</u>
40 KC	to 30 KC level	<u>-10.4 dbm</u>	<u>-9.6 dbm</u>
50 KC		<u>-10.2 dbm</u>	<u>-9.5 dbm</u>
60 KC		<u>-10.0 dbm</u>	<u>-9.4 dbm</u>
70 KC		<u>-10.1 dbm</u>	<u>-9.6 dbm</u>
80 KC	+0.25 db	<u>-10.0 dbm</u>	<u>-9.7 dbm</u>
90 KC	with respect	<u>-10.0 dbm</u>	<u>-9.7 dbm</u>
100 KC	to 90 KC level	<u>-10.0 dbm</u>	<u>-9.8 dbm</u>
110 KC		<u>-10.0 dbm</u>	<u>-9.8 dbm</u>
120 KC		<u>-9.9 dbm</u>	<u>-9.8 dbm</u>

DATE 13 July 1963

TESTER [Signature]

SUPERVISOR [Signature]

QUALITY ASSURANCE [Signature]

GEEIA

Robert A. Legler

GA-W

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 OVERALL TEST

BRII/14

STATION GA MRC-85

Transmission Path: From GA Station to GK Station

Exciter Serial No. 012 1V

Receiver Serial No. Rec. A# 021 1V, Rec. B# 023 3V

Power Amplifier Serial No. 018 1V

1. SYSTEM INTERMODULATION

Intermodulation Frequency

THIS TEST WAS CONDUCTED 15 KC
WITH PA OPERATING AT 7KW 55 KC
80 KC

EXPECTED
NPR

ACTUAL 3

	Rec. A	Rec. B
Minimum <u>NPR 45 db</u>	<u>-50/56</u> dbm	<u>-51/52</u> dbm
Maximum <u>55 dbm</u>	<u>-48/55</u> dbm	<u>-50/53</u> dbm
Maximum <u>55 dbm</u>	<u>-51/56</u> dbm	<u>-50/55</u> dbm

2. RADIO BASEBAND FREQUENCY RESPONSE

EXPECTED

ACTUAL 3

Frequency

12 KC
20 KC
30 KC
40 KC
50 KC
60 KC

-2 + 1 db
with respect
to 30 KC level

Rec. A	Rec. B
<u>-10.9</u> dbm	<u>-10.5</u> dbm
<u>-10.2</u> dbm	<u>-9.8</u> dbm
<u>-10.1</u> dbm	<u>-9.6</u> dbm
<u>-10.1</u> dbm	<u>-9.5</u> dbm
<u>-10.1</u> dbm	<u>-9.5</u> dbm
<u>-10.2</u> dbm	<u>-9.4</u> dbm

70 KC
80 KC
90 KC
100 KC
110 KC
120 KC

+0.25 db
with respect
to 90 KC level

<u>-10.2</u> dbm	<u>-9.5</u> dbm
<u>-10.3</u> dbm	<u>-9.5</u> dbm
<u>-10.4</u> dbm	<u>-9.6</u> dbm
<u>-10.4</u> dbm	<u>-9.6</u> dbm
<u>-10.5</u> dbm	<u>-9.8</u> dbm
<u>-10.5</u> dbm	<u>-9.8</u> dbm

DATE 13 July 1963

TESTER [Signature]

SUPERVISOR [Signature]

QUALITY ASSURANCE [Signature]

GEETA

Robert D. Tegler

5-55

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 LINK TEST

BRII/15

STATION I.D.

Transmission Path: From LR Station to I.D. Station

V. Exc. Serial No. 014 V. Rec. Serial No. 025
H. Exc. Serial No. 013 V. Rec. Serial No. 027
V. 10 KW P.A. No. 1 H. Rec. Serial No. 026
H. 10 KW P.A. No. 2 H. Rec. Serial No. 028
V. Trans. Ant. No. 1
H. Trans. Ant. No. 2

+ 9db ATTENUATOR

1. RADIO NOISE AND SPURIOUS TONE LEVELS						EXPECTED	ACTUAL
FREQ. HI-LO			FREQ. HI-LO			Freq. Noise Level	
Baseband Noise	12	60	53	52	60	-60 dbm	KC dbm
	24	50	48	54	60		KC dbm
	31	61	49	60	60		KC dbm
	32	61	49	65	58		KC dbm
	36	52	50	84	52		KC dbm
	39	61	48	97	59		KC dbm
	44	61	48	119	70		65

NOTE: Record all noise signals greater than -60 dbm, except signal at 60 KC.

2. RADIO BASEBAND FREQUENCY RESPONSE

Frequency	EXPECTED	ACTUAL
12 KC		-11.2 dbm
20 KC	-2 +1 dbm	-10.5 dbm
30 KC	with respect	-10 dbm
40 KC	to 30 KC level	-10 dbm
50 KC		-10 dbm
60 KC		-10 dbm
70 KC		-10 dbm
80 KC	+0.25 dbm	-10 dbm
90 KC	with respect	-10 dbm
100 KC	to 90 KC level	-10 dbm
110 KC		-10 dbm
120 KC		-10 dbm

DATE 17 June 63
TESTER K. NELSON
SUPERVISOR B. GIBSON
QUALITY ASSURANCE J. G. JONES

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 LINK TEST

BRH/15

STATION 1R-W

Transmission Path: From 1D-E Station to 1R-W Station

V. Exc. Serial No. 016 1-V V. Rec. Serial No. 029 1-V
H. Exc. Serial No. 015 2-H V. Rec. Serial No. 031 3-V
V. 10 KW P.A. No. 015 1-V H. Rec. Serial No. 030 2-H
H. 10 KW P.A. No. 016 2-H H. Rec. Serial No. 032 4-H
V. Trans. Ant. No. 1
H. Trans. Ant. No. 2

1. RADIO NOISE AND SPURIOUS TONE LEVELS		EXPECTED	ACTUAL
Baseband Noise	SPURIOUS NOISE PULSES	-60 dbm	12 to 18 KC <u>-54</u> dbm
	FADERS + NOISE BURSTS		<u>21</u> KC <u>-46</u> dbm
	RADIO PILOT		<u>60</u> KC <u>-16</u> dbm
	SPURIOUS NOISE THROUGHOUT ENTIRE BAND		<u> </u> KC <u> </u> dbm
			<u> </u> KC <u> </u> dbm

NOTE: Record all noise signals greater than -60 dbm, except signal at 60 KC.

2. RADIO BASEBAND FREQUENCY RESPONSE

Frequency	EXPECTED	ACTUAL
12 KC		<u>-20</u> dbm
20 KC	-2 +1 dbm	<u>-14</u> dbm
30 KC	with respect	<u>-19</u> dbm
40 KC	to 30 KC level	<u>-19</u> dbm
50 KC		<u>-19</u> dbm
60 KC		<u>-12.75</u> dbm
70 KC		<u>-19</u> dbm
80 KC	+0.25 dbm	<u>-19</u> dbm
90 KC	with respect	<u>-19</u> dbm
100 KC	to 90 KC level	<u>-19</u> dbm
110 KC		<u>-19</u> dbm
120 KC		<u>-19</u> dbm

DATE 16 June 1963
TESTER Marlin Kishner
SUPERVISOR Robert W. Smith
QUALITY ASSURANCE R. B. Spence

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 LINK TEST

BRII/15

STATION IR-ETransmission Path: From IC-W Station to IR-E Station

V. Exc. Serial No. <u>010</u>	<u>1-V</u>	V. Rec. Serial No. <u>017</u>	<u>1-V</u>
H. Exc. Serial No. <u>009</u>	<u>2-H</u>	V. Rec. Serial No. <u>019</u>	<u>3-V</u>
V. <u>10</u> KW P.A. No. <u>009</u>	<u>1-V</u>	H. Rec. Serial No. <u>018</u>	<u>2-H</u>
H. <u>10</u> KW P.A. No. <u>010</u>	<u>2-H</u>	H. Rec. Serial No. <u>020</u>	<u>4-H</u>
V. Trans. Ant. No. <u>009</u>	<u>2</u>		
H. Trans. Ant. No. <u>009</u>	<u>1</u>		

1. RADIO NOISE AND SPURIOUS TONE LEVELS EXPECTED ACTUAL

Baseband Noise	REC-4-H	HIT OR FADE-NOT STEADY	-60 dbm	Freq. Noise Level
				56 KC -51 dbm
	REC 3-V	AT 2500V SLOT	12 To	32 KC -51.6 dbm
	"	"	HIT OR FADE	110 KC -50 dbm
	REC 2-H	AT 250V SLOT	STEADY	119 KC -49 dbm
	REC 1-V	"	HIT OR FADE	63 KC -56 dbm

NOTE: Record all noise signals greater than -60 dbm, except signal at 60 KC.

2. RADIO BASEBAND FREQUENCY RESPONSE

Frequency	EXPECTED	ACTUAL
12 KC		-12 -76 dbm
20 KC	-2 +1 dbm	-11.8 -76 dbm
30 KC	with respect	-11.5 -75.5 dbm
40 KC	to 30 KC level	-11.5 -75.5 dbm
50 KC		-11.5 -75 dbm
60 KC		-11.7 -75 dbm
70 KC		-11.0 dbm
80 KC	+0.25 dbm	-11.0 -72.1 dbm
90 KC	with respect	-11.0 -72 dbm
100 KC	to 90 KC level	-11.0 dbm
110 KC		-11.0 dbm
120 KC		-11.0 dbm

DATE 15 JUNE 1963TESTER E. HallSUPERVISOR R. W. SmithQUALITY ASSURANCE R. B. Soren

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 LINK TEST

BRII/15

STATION IC WEST

Transmission Path: From IR Station to IC Station
IC

V. Exc. Serial No. 004 V. Rec. Serial No. _____
H. Exc. Serial No. 003 V. Rec. Serial No. 006
V. _____ KW P.A. No. _____ H. Rec. Serial No. 007
H. _____ KW P.A. No. _____ H. Rec. Serial No. 008
V. Trans. Ant. No. _____
H. Trans. Ant. No. _____

1. RADIO NOISE AND SPURIOUS TONE LEVELS EXPECTED ACTUAL

Baseband Noise	Rgc. #3 " #2 " #4	-60 dbm	Freq. Noise Level
		120 KC	-42 dbm
		120 KC	-55 dbm
		120 KC	-69 dbm
		_____ KC	_____ dbm
_____ KC	_____ dbm		

NOTE: Record all noise signals greater than -60 dbm, except signal at 60 KC.

2. RADIO BASEBAND FREQUENCY RESPONSE

		Receiver # 2 Only	
Frequency	EXPECTED	ACTUAL	
12 KC			-11 dbm
20 KC	-2 +1 dbm		-9.25 dbm
30 KC	with respect		-10.25 dbm
40 KC	to 30 KC level		-11.0 dbm
50 KC			-11.0 dbm
60 KC			-11.0 dbm
70 KC			-10 dbm
80 KC	+0.25 dbm		-10 dbm
90 KC	with respect		-10.25 dbm
100 KC	to 90 KC level		-10.25 dbm
110 KC			-10.25 dbm
120 KC			-10.25 dbm

DATE 16 June 1963
TESTER J. J. J. J.
SUPERVISOR F. A. J. J.
QUALITY ASSURANCE W. J. J. J.
Sheet 1 of 1
GEEIA Robert A. Leyler

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 LINK TEST

BRII/15

STATION IC

Transmission Path: From GK Station to IC Station

V. Exc. Serial No. <u>008</u>	V. Rec. Serial No. <u>009</u>
H. Exc. Serial No. <u>007</u>	V. Rec. Serial No. <u>011</u>
V. <u>10</u> KW P.A. No. <u>017</u>	H. Rec. Serial No. <u>010</u>
H. <u>10</u> KW P.A. No. <u>006</u>	H. Rec. Serial No. <u>002</u>
V. Trans. Ant. No. <u>1</u>	
H. Trans. Ant. No. <u>X 2</u>	

KAS

1. RADIO NOISE AND SPURIOUS TONE LEVELS EXPECTED ACTUAL

Baseband Noise	-60 dbm	Freq. Noise Level
		KC dbm
2nd harmonic of	Rx # 1	120 KC -29 dbm
60 Kc Pilot Tone	Rx # 2	120 KC -35 dbm
	Rx # 3	120 KC -26 dbm
	Rx # 4	120 KC -26 dbm

NOTE: Record all noise signals greater than -60 dbm, except signal at 60 KC.

GK must drop Horiz. Mod. to make radio B.B. freq. response test on Vert. Receive at IC

2. RADIO BASEBAND FREQUENCY RESPONSE

VERTICAL		Frequency	HORIZONTAL	
Rx # 1	Rx # 3		Rx # 2	Rx # 4
			EXPECTED ACTUAL	
		12 KC		11.25 dbm
10 dbm	10 dbm	20 KC	11.0 dbm	-2 +1 dbm
9.5	9.5	30 KC	10.5	10.5 dbm
10.5	10.5	40 KC	10.75	with respect
9.0	9.5	50 KC	10.25	to 30 KC level
9.25	9.75	60 KC	10.25	10.25 dbm
9.75	10.0		10.5	10.25 dbm
		70 KC	10.25 dbm	10.0 dbm
9.75 dbm	10.0 dbm	80 KC	10.0	+0.25 dbm
10.0	10.0	90 KC	10.0	with respect
10.0	10.0	100 KC	9.75	to 90 KC level
10.0	10.25	110 KC	9.75	10.25 dbm
10.0	10.25	120 KC	9.75	10.25 dbm
10.0	10.25			10.25 dbm

DATE 27 July 63

TESTER R. Shadell

SUPERVISOR F. H. G. 10-10

QUALITY ASSURANCE William R. Hall

Sheet 1 of 1

GEEIA

Robert W. Seyler

5-60

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 LINK TEST

BRII/15

IC

STATION G.K.

Transmission Path: From G.K. Station to G.K. Station

V. Exc. Serial No. <u>001</u>	V. Rec. Serial No. <u>1</u> <u>S/N 1</u>
H. Exc. Serial No. <u>005</u>	V. Rec. Serial No. <u>3</u> <u>S/N 3</u>
V. <u>10</u> KW P.A. No. _____	H. Rec. Serial No. <u>2</u> <u>S/N 2</u>
H. <u>10</u> KW P.A. No. _____	H. Rec. Serial No. <u>4</u> <u>S/N 4</u>
V. Trans. Ant. No. _____	
H. Trans. Ant. No. _____	

1. RADIO NOISE AND SPURIOUS TONE LEVELS EXPECTED ACTUAL

Baseband Noise SLOW VARYING TONE.

	Freq. Noise Level
-60 dbm	-55 KC -52 dbm
	-64 KC -51 dbm
	-119 KC -57 dbm
	_____ KC _____ dbm
	_____ KC _____ dbm

NOTE: Record all noise signals greater than -60 dbm, except signal at 60 KC.

2. RADIO BASEBAND FREQUENCY RESPONSE

<u>2-H</u>	Frequency	<u>4-H</u>
-11.1	12 KC -11.3	
	20 KC -10.6	
-10.1	30 KC -10.2	
	40 KC -10.2	
	50 KC -10.2	
-10.1	60 KC -10.2	
-10.1	70 KC -9.8	
	80 KC -9.7	
-10.3	90 KC -9.8	
	100 KC -9.6	
	110 KC -9.6	
-10.3	120 KC -9.6	

	1-V	3-V.
EXPECTED	ACTUAL	
-2 +1 dbm	-11.5	-10.8 dbm
with respect to 30 KC level	-10.5	-10.5 dbm
	-10.5	-10.1 dbm
	-10.9	-10.1 dbm
	-10.9	-10.4 dbm
+0.25 dbm	-9.9	-9.4 dbm
with respect to 90 KC level	-10	-9.4 dbm
	-9.5	-9.4 dbm
	-9.5	-9.5 dbm
	-10.2	-9.4 dbm

DATE 27 JUNE, 63
TESTER EC Shaw
SUPERVISOR Donald S. Carter
QUALITY ASSURANCE W.P. Reed

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 LINK TEST

BRII/15

STATION G.K.

Transmission Path: From GA Station to GA Station

V. Exc. Serial No. 1 S/N 005 V. Rec. Serial No. 1 S/N 013
H. Exc. Serial No. 2 S/N 006 V. Rec. Serial No. 4 S/N 016
V. 10 KW P.A. No. 008 H. Rec. Serial No. 2 S/N 014
H. 10 KW P.A. No. 007 H. Rec. Serial No. 3 S/N 015
V. Trans. Ant. No. 2
H. Trans. Ant. No. 1

1. RADIO NOISE AND SPURIOUS TONE LEVELS EXPECTED ACTUAL

Baseband Noise USING -70 SCALE.
VARYING TONE - STEADY
WITHIN ONE db.
-60 dbm 118 KC -62 dbm
assumed 118 KC -62 dbm
KC dbm
KC dbm
KC dbm

NOTE: Record all noise signals greater than -60 dbm, except signal at 60 KC.

2. RADIO BASEBAND FREQUENCY RESPONSE

REC 4V			REC 1V			REC 2H			REC 3H		
Frequency			EXPECTED			ACTUAL					
-20.2	12 KC	-20.3				-20.2	-20.3	dbm			
-19.6	20 KC		-2	+1 dbm		-19.5		dbm			
-19.1	30 KC	-19.5		with respect		-19	-19.3	dbm			
-19	40 KC			to 30 KC level		-19		dbm			
-19	50 KC					-18.7		dbm			
-18.8	60 KC	-18.8				-18.5	-18.8	dbm			
-18.9	70 KC	-19				-18.9	-19	dbm			
-18.8	80 KC			+0.25 dbm		-19		dbm			
-18.9	90 KC	-18.8		with respect		-19	-19	dbm			
-19	100 KC			to 90 KC level		-18.8		dbm			
-18.8	110 KC					-18.8		dbm			
-18.7	120 KC	-18.9				-19	-19	dbm			

DATE 10 JUNE 63
TESTER KC Shown TV
SUPERVISOR Russell E. Garton
QUALITY ASSURANCE B. E. Bass

GA-W

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/MRC-85 LINK TEST

BRH/15

STATION GA MRC-85

Transmission Path: From GA ^{GK} Station to GA ^{GK} Station

V. Exc. Serial No. 012 V. Rec. Serial No. 21 (1V)
H. Exc. Serial No. 011 V. Rec. Serial No. 23 (3V)
V. 10 KW P.A. No. CARRIAGE 018 H. Rec. Serial No. 22 (2H)
H. 10 KW P.A. No. CARRIAGE 015 H. Rec. Serial No. 24 (4H)
V. Trans. Ant. No. ONE
H. Trans. Ant. No. TWO

1. RADIO NOISE AND SPURIOUS TONE LEVELS EXPECTED ACTUAL

	EXPECTED	ACTUAL
Baseband Noise	-60 dbm	Freq. Noise Level
		_____ KC _____ dbm
SPURIOUS NOISES WERE NOTED ON BOTH VERTICAL		_____ KC _____ dbm
RCVR'S. ACROSS ENTIRE BASEband with AN		_____ KC _____ dbm
AVERAGE READING OF -46 dbm PEAKING AT -41 dbm.		_____ KC _____ dbm
ON RCVR'S 2&4 NO READINGS ABOVE -60dbm WERE NOTED		_____ KC _____ dbm

NOTE: Record all noise signals greater than -60 dbm, except signal at 60 KC.

2. RADIO BASEBAND FREQUENCY RESPONSE

Frequency	EXPECTED	ACTUAL
BASEBAND FREQ. RESPONSE 12 KC		_____ dbm
LINK TEST COULD NOT BE 20 KC	-2 +1 dbm	_____ dbm
CONDUCTED DUE TO RAPIDLY 30 KC	with respect	_____ dbm
FLUCTUATING LEVELS. 40 KC	to 30 KC level	_____ dbm
LOCAL TESTS DID NOT REVEAL 50 KC		_____ dbm
AN EQUIPMENT MALFUNCTION. 60 KC		_____ dbm
70 KC		_____ dbm
80 KC	+ 0.25 dbm	_____ dbm
90 KC	with respect	_____ dbm
100 KC	to 90 KC level	_____ dbm
110 KC		_____ dbm
120 KC		_____ dbm

DATE 12 July 1963

TESTER [Signature]

SUPERVISOR [Signature]

QUALITY ASSURANCE [Signature]

Sheet 1 of 6 EEA

5-63

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/TRC-35 STATION

BRII/31

STATION GAB

Transmission Path: From Station GAB to Station GEL

Transmitter Serial No. #1 7 02, #2 3789

Assigned Frequency 386.5000 MC

Transmitter, T302/TRC

	EXPECTED	ACTUAL
		XMTG#1 XMTG#2
1. FREQUENCY	$\pm .002\%$ of assigned	<u>386.506</u> MC <u>386.511</u> MC
2. POWER OUTPUT	Minimum 50 Watts	<u>85</u> Watts <u>100</u> Watts
3. AUTOMATIC FREQUENCY CONTROL		<u>WJS</u> <u>WJS</u> Initials
4. LOW POWER ALARM	Maximum 30 Watts	<u>26</u> Watts <u>26</u> Watts
RF Output Power		

DATE 21 July 1964

TESTER W. J. Schaefer

SUPERVISOR Frank J. Stinson

QUALITY ASSURANCE Bond

GEEIA
Sheet 1 of 1

Robert A. Legler

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
AN/TRC-35 STATION

BRH/31

STATION GEL
Transmission Path: From Station GEL to Station GAB
Transmitter Serial No. #1 444, #2 920
Assigned Frequency 374.5 MC

Transmitter, T302/TRC

	EXPECTED	ACTUAL
		XMTG#1 XMTG#2
1. FREQUENCY	$\pm .002\%$ of assigned	<u>374.506</u> MC <u>374.506</u> MC
2. POWER OUTPUT	Minimum 50 Watts	<u>120</u> Watts <u>84</u> Watts
3. AUTOMATIC FREQUENCY CONTROL		<u>MC</u> <u>MC</u> Initials
4. LOW POWER ALARM	Maximum 30 Watts	<u>22</u> Watts <u>45</u> Watts
RF Output Power		

DATE 21 July 1963

TESTER George B. Brutto

SUPERVISOR Andrew J. Hovath

QUALITY ASSURANCE Mr. Crisp

GEEIA Y R F

Sheet 1 of 1

FEDERAL ELECTRIC CORPORATION

BR11/32

BIG RALLY II PROJECT

DATA SHEET

AN/TRC-35 STATION

STATION GABTransmission Path: From Station GAB to Station GELReceiver Serial No. #1 1516 #2 706

RECEIVER, R-417/TRC (TRC-35)

EXPECTED

ACTUAL

REC#1

REC#2

1. SQUELCH (SENSITIVITY)

Measure meter reading (C)	approximately 30 μ a	<u>29</u> μ a	<u>30.05</u> μ a
Measure meter reading (H)		<u>18</u> μ a	<u>19</u> μ a
Input Signal Level	Max 250 μ v	<u>250</u> μ v	<u>250</u> μ v

2. BANDWIDTH

Lower limit		<u>267</u> kc	<u>269</u> kc
Upper limit		<u>280</u> kc	<u>270</u> kc
Bandwidth	540kc \pm 25 kc	<u>547</u> kc	<u>539</u> kc

DATE 21 JULY 1963TESTER W. J. SchreiberSUPERVISOR Frank J. StojanovichQUALITY ASSURANCE Robert D. Gyle

GEEIA

Sheet 1 of 1

FEDERAL ELECTRIC CORPORATION

BR11/32

BIG RALLY II PROJECT

DATA SHEET

AN/TRC-35 STATION

STATION GELTransmission Path: From Station GEL to Station GABReceiver Serial No. #1 1133 #2 264

RECEIVER, R-417/TRC (TRC-35)

EXPECTED

ACTUAL

Assigned Freq. = 386.5 MC

REC#1

REC#2

1. SQUELCH (SENSITIVITY)

Measure meter reading (C) approximately 30 μ a 30 μ a 30 μ aMeasure meter reading (H) 14 μ a 15 μ aInput Signal Level Max 250 μ v 250 μ v 250 μ v

2. BANDWIDTH

Lower limit 387,321 kc 387,007 kc

Upper limit 386,653 kc 386,092 kc

Bandwidth 540kc \pm 25 kc 668 kc 915 kcDATE 21 July 1963TESTER George B. BennettSUPERVISOR Ch. Lee J. HorvathQUALITY ASSURANCE M. C. CoyGEEIA
Sheet 1 of 1

FEDERAL ELECTRIC CORPORATION

BR11/33

BIG RALLY II PROJECT

DATA SHEET

AN/TRC-35 OVERALL TEST

STATION GABTransmission Path: From Station GAB to Station GEL

1. R.F. DEVIATION AND BASEBAND GAIN

	EXPECTED	ACTUAL	
		XMTG-REC#1	XMTG-REC#2
Signal level (Step E)		<u>32</u> μ v	<u>36</u> μ v
Signal level (Step L)		<u>32</u> μ v	<u>36</u> μ v
Receiver output (Step I)	-6 dbm	<u>-6</u> dbm	<u>-6</u> dbm
Receiver output (Step N)	0dbm \pm 0.5dbm	<u>-7</u> dbm	<u>-7</u> dbm

2. BASEBAND FREQUENCY RESPONSE READJUSTED Tx INPUT AND Rx OUTPUT USING BUILT IN 1000 cps TONE FOR THIS TEST.

FREQUENCY	EXPECTED	ACTUAL	
		XMTG-REC#1	XMTG-REC#2
H.P. 200CD			
8KC		<u>0m</u> dbm	<u>-0.2</u> dbm
16KC	Within \pm 1 db of the 8 KC level	<u>-0.1</u> dbm	<u>-1.2</u> dbm
32KC		<u>-0.2</u> dbm	<u>-1.5</u> dbm
48KC		<u>-0.5</u> dbm	<u>-1.7</u> dbm
68KC		<u>-1.6</u> dbm	<u>-1.5</u> dbm
90KC	At least 35db from 8 KC level	<u>-44.0</u> dbm	<u>-43.8</u> dbm

3. ANTENNA VSWR

EXPECTED			ACTUAL
Transmit Antenna Current			
Forward	Minimum	30 μ a	<u>34</u> μ a
Reflected	Maximum	10 μ a	<u>2</u> μ a
Receive Antenna Current			
Forward	Minimum	30 μ a	<u>34</u> μ a
Reflected	Maximum	10 μ a	<u>2</u> μ a

DATE 22 July 1963TESTER Wm. SchreinerSUPERVISOR Frank J. SkrzinskiQUALITY ASSURANCE BoucherGEEIA
Sheet 1 of 1

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FEDERAL ELECTRIC CORPORATION

BRH/33

BIG RALLY II PROJECT

DATA SHEET

AN/TRC-35 OVERALL TEST

STATION GELTransmission Path: From Station GEL to Station GAB

1. R.F. DEVIATION AND BASEBAND GAIN

	EXPECTED	ACTUAL	
		XMTG-REC#1	XMTG-REC#2
Signal level (Step E)		<u>26</u> μ v	<u>28</u> μ v
Signal level (Step L)		<u>26</u> μ v	<u>28</u> μ v
Receiver output (Step I)	-6 dbm	<u>-6</u> dbm	<u>-6</u> dbm
Receiver output (Step N)	0dbm \pm 0.5dbm	<u>0</u> dbm	<u>0</u> dbm

2. BASEBAND FREQUENCY RESPONSE

FREQUENCY	EXPECTED	ACTUAL	
		XMTG-REC#1	XMTG-REC#2
H. P. 200CD			
8KC		<u>0</u> dbm	<u>0</u> dbm
16KC		<u>0</u> dbm	<u>0</u> dbm
32KC	Within \pm 1 db	<u>+ .5</u> dbm	<u>+ .25</u> dbm
48KC	of the 8 KC	<u>+1</u> dbm	<u>+ .125</u> dbm
68KC	level	<u>+2.5</u> dbm	<u>+ .3</u> dbm
90KC	See note	<u>Below</u> dbm	<u>Below</u> dbm
	At least 35db from		
	8 KC level	Meter scale	Meter scale

3. ANTENNA VSWR

EXPECTED			ACTUAL
Transmit Antenna Current			
Forward	Minimum	30 μ a	<u>32</u> μ a
Reflected	Maximum	10 μ a	<u>6</u> μ a
Receive Antenna Current			
Forward	Minimum	30 μ a	<u>32</u> μ a
Reflected	Maximum	10 μ a	<u>7</u> μ a

Note= Out of specs.

DATE 21 July 1963TESTER George B BarrettSUPERVISOR Andrew J. BonnettQUALITY ASSURANCE M. O. G. J.GEEIA DR. F. F. F.

Sheet 1 of 1

6-6

FEDERAL ELECTRIC CORPORATION

BRII/34

BIG RALLY II PROJECT

DATA SHEET

AN/TRC-35 LINK TEST

STATION GABTransmission Path: From Station GAB to Station GEL

1. NOISE AND SPURIOUS TONES

FREQUENCY	NOISE LEVEL	
BOTH RECEIVERS OUT OF SPECS THROUGH OUT THE BASEBAND.	REC #1	REC #2
<u>12</u> KC	<u>-43.0</u> dbm	<u>-45.0</u> dbm
<u> </u> KC	<u> </u> dbm	<u> </u> dbm
<u> </u> KC	<u> </u> dbm	<u> </u> dbm
<u> </u> KC	<u> </u> dbm	<u> </u> dbm
<u>68</u> KC	<u>-35.0</u> dbm	<u>-40.0</u> dbm

Note: Record all noise signals greater than -55 dbm.

2. BASEBAND FREQUENCY RESPONSE LINK LEVELS READJUSTED FOR THIS TEST

TRANSMISSION FREQUENCY	EXPECTED	ACTUAL	
		REC #1	REC #2
8 KC		<u>-40.3</u> dbm	<u>0</u> dbm
16 KC	With ± 1 db	<u>-40.3</u> dbm	<u>-40.3</u> dbm
32 KC	of the 8 KC	<u>-40.0</u> dbm	<u>-40.3</u> dbm
48 KC	level	<u>-40.3</u> dbm	<u>-40.8</u> dbm
68 KC		<u>-40.1</u> dbm	<u>-42.0</u> dbm
90 KC	At least 35 db from 8 KC level	<u>-49.7</u> dbm	<u>-49.7</u> dbm

Note: It may be necessary to obtain a reasonable average meter indication if fading is present.

DATE 22 JULY 1963TESTER W. K. SchreiberSUPERVISOR Frank P. SkoppinskiQUALITY ASSURANCE MontgomeryGEEIA Robert A. Logler

Sheet 1 of 1

FEDERAL ELECTRIC CORPORATION

BR11/34

BIG RALLY II PROJECT

DATA SHEET

AN/TRC-35 LINK TEST

STATION GELTransmission Path: From Station GEL to Station CAB

1. NOISE AND SPURIOUS TONES

FREQUENCY

NOISE LEVEL

	REC #1	REC #2
<u>45 TO 68</u> KC	<u>-52 TO -55</u> dbm	<u> </u> dbm
<u> </u> KC	<u> </u> dbm	<u> </u> dbm
<u> </u> KC	<u> </u> dbm	<u> </u> dbm
<u> </u> KC	<u> </u> dbm	<u> </u> dbm
<u>12 TO 68</u> KC	<u> </u> dbm	<u>-48 TO -51</u> dbm

Note: Record all noise signals greater than -55 dbm.

2. BASEBAND FREQUENCY RESPONSE

TRANSMISSION FREQUENCY EXPECTED

ACTUAL

		REC #1	REC #2
8 KC		<u>4.5</u> dbm	<u>0</u> dbm
16 KC		<u>4.6</u> dbm	<u>4.25</u> dbm
32 KC	With ± 1 db	<u>4.6</u> dbm	<u>4.25</u> dbm
48 KC	of the 8 KC	<u>4.1</u> dbm	<u>4.6</u> dbm
68 KC	level	<u>4.2</u> dbm	<u>4.5</u> dbm
90 KC	At least 35 db from 8 KC level	<u>-43</u> dbm	<u>-40</u> dbm

Note: It may be necessary to obtain a reasonable average meter indication if fading is present.

NOTE 1 MEASURED AT 2500 CYCLES DATE 22 JULY 1963
SLOT ON SIERRA 125BNOTE 2 MEASUREMENTS TAKEN WITH
FILTERS INSTALLED IN
RECEIVERSTESTER George B. BarretoSUPERVISOR Andrew J. HorvathQUALITY ASSURANCE J. EmileGEEIA U. R. P. A.

Sheet 1 of 1

6-8

ALARM CHECKS

ID-E

FAULT IND. # 1

FAULT IND. # 2

FILAMENT CHG OVER ✓
 CABINET TEMP ✓
 ALARM PS FAILURE ✓
 HIGH VSWR ✓
 LOW FWD POWER ✓
 FILAMENT REG LIMITS ✓
 RECYCLE ✓

FILAMENT CHG OVER ✓
 CABINET TEMP ✓
 ALARM PS FAILURE ✓
 HIGH VSWR ✓
 LOW FWD POWER ✓
 FILAMENT REG LIMITS ✓
 RECYCLE ✓

HEAT EXCHANGER #1

LOW LEVEL ✓
 LOW TEMP ✓
 HIGH TEMP ✓
 DRY AIR N/A

HEAT EXCHANGER #2

LOW LEVEL ✓
 LOW TEMP ✓
 HIGH TEMP ✓
 DRY AIR N/A

MOD TRANSFER ✓
 MOD FAILURE ✓
 VSWR ✓
 LOW RF ✓

MOD TRANSFER ✓
 MOD FAILURE ✓
 VSWR ✓
 LOW RF ✓

RECEIVER A B
 PILOT ✓ PILOT ✓
 NOISE ✓ NOISE ✓

RECEIVER A B
 PILOT ✓ PILOT ✓
 NOISE ✓ NOISE ✓

DATE 7 June 63
 TESTER D. P. H. H. H.
 SUPERVISOR D. P. H. H. H.
 QUALITY ASSURANCE D. P. H. H. H.

SRP 7-1

TEST DATA SHEET

ID-E

STATION ID DATE 7 JUNE, 63

DUMMY LOAD OPERATION

LOAD CALIBRATION FUNCTION O.K.

PA INTO LOAD OPERATION O.K.

EQUIPMENT INTERLOCK FUNCTION CHECK

O.K.

DATE 7 JUNE, 63
 TESTER R. E. Johnson
 QUALITY ASSURANCE
 SUPERVISOR R. E. Johnson

SRP

DEHYDRATOR PRESSURE CHECK

ID-E

SYSTEM # 1

READING BEFORE CHECK 5"

READING AFTER $\frac{1}{2}$ HR. 4"

TOTAL DROP IN
PRESSURE 1"

SYSTEM # 2

READING BEFORE CHECK 5.4"

READING AFTER $\frac{1}{2}$ HR. 3.2"

TOTAL DROP IN
PRESSURE 2.2"

AIR CONDITIONERS HEATING AND VENTILATING

68K
#1 SERIAL # 3672

AUTOMATIC OPERATION O.K.

MANUAL OPERATION O.K.

68L
#2 SERIAL # 3673

AUTOMATIC OPERATION O.K.

MANUAL OPERATION O.K.

DATE 6 JUNE, 1963
TESTER C. W. Maffey
SUPERVISOR R. E. Robbins
QUALITY ASSURANCE T. B. E. Brown

SRP

IR-W

DEHYDRATOR/PRESSUREIZATION UNIT

I R VAN WEST

9 JUNE 1963

Press. at beginning of test: 5" OF WATER

Press. after one hour: 1/2 OF SYSTEM OK 1/2 SYSTEM NO PRESSURE
(ANTENNA #1)

Press. Drop: _____

Remarks:

I R VAN EAST

Press. at beginning of test: *SEE REMARKS

Press. after one hour: _____

Press. Drop: _____

Inches of water:

Remarks: * DEHYDRATOR INOPERATIVE SINCE 22 MAY 1963 DUE /
TO DEFECTIVE CENTRIFUGAL SWITCH IN MOTOR.
THIS ITEM TO BE CARRIED OVER TO APTO 88 EXCEPTION LIST RRP

DATE	<u>6-9-63</u>
TESTER	<u>E. Hall</u>
SUPERVISOR	<u>R. W. King</u>
QUALITY ASSURANCE	<u>R. B. Young</u>

7-4

IR-W

AIR CONDITIONERS

I.R. VAN WEST

Serial # 3670 Hours 0330.9

	Air Conditioning	Ventilation	Heating
Auto	<u>OK</u>	<u>OK</u>	<u>OK</u>
Manual	<u>OK</u>	<u>OK</u>	<u>OK</u>

Remarks: DRAIN TUBE CLOGGED AS SHOWN BY WATER
UNDER BLOWER UNIT.*This item repaired 6/12/63 ARP (GEEIN)*Serial # 3671 Hours 7890.3

	Air Conditioning	Ventilation	Heating
Auto	<u>OK</u>	<u>OK</u>	<u>OK</u>
Manual	<u>OK</u>	<u>OK</u>	<u>OK</u>

Remarks: DRAIN TUBE CLOGGED AS SHOWN BY WATER
UNDER BLOWER UNIT.*This item repaired 6/12/63 ARP (GEEIN)*DATE: JUNE 9, 1963Performed by: L-9-63Witnessed by: R. W. KingFEC QA: R. B. Spear*ARP*

7-5

IR-W

SAFETY DEVICES

I-R VAN WEST

INTERLOCKSPA #1 O.K.
PA #2 O.K.Shorting Stick OK

Circuit Breaker Operation:

Rcvr #1 OK
Rcvr #2 OK
Rcvr #3 OK
Rcvr #4 OKExc. #1 OK
Exc. #2 OK

Remarks: RECEIVER 3 & 4 HAVE AIR SWITCH BYPASSED ✓
 COOLANT FLOW SWITCH ON KRYSTRON CARRIAGE #005 INOPERATIVE
 BOTH OF ABOVE ITEMS ARE BEING CARRIED ON AFPO 88 EXCEPTION LIST

Fault Indicator PanelsPWR AMP.

Fil Chy Over ✓
 Cab. Temp. ✓ NOT CHECKED
 Alarm PS Fail ✓
 High VSWR ✓
 Low Fwd Pwr ✓
 Fil Reg Limits ✓
 Recycle ✓

Heat Exchange.

	#1	#2
Low Coolant Temp.	<u>✓</u>	<u>✓</u>
Low Temp.	<u>✓</u>	<u>✓</u>
High Temp.	<u>✓</u>	<u>✓</u>

Exciter

Modulator Trans. ✓
 Modulator Fail. ✓
 High VSWR ✓
 Low VSWR ✓

NOT WORKING
CORRECTLY

RECEIVER "A" FI "1" FI "2"

Radio Pilot ✓
 Noise Amplifier ✓

Receiver "B2" FI "1" FI #2

Radio Pilot ✓
 Noise Amplifier ✓

DATE
 TESTER
 SUPERVISOR
 QUALITY ASSURANCE

6-9-63
 E. J. Hall
 R. B. Sprock
 HRP.

7-6

SAFETY DEVICES

IR-E

I-R VAN EAST

INTERLOCKSPA #1 OKPA #2 OKCIRCUIT BREAKER OPERATIONShorting Stick OKRcvr #1 ✓Rcvr #2 ✓Rcvr #3 ✓Rcvr #4 ✓Exc. #1 ✓Exc. #2 ✓

Remarks: ① Receiver 1 + 4 HAVE AIR SWITCH BYPASSED ✓

② REGULATED 120 V AC MOTOR BURNED OUT PA #1 ✓

FAULT INDICATOR PANELS.PWR AMP.

Fil Chy Over	<u>✓</u>
Cab Temp	<u>✓</u>
Alarm P ^S Fail	<u>✓</u>
High VSWR	<u>✓</u>
Low Fwd Pwr	<u>✓</u>
Fil Reg Limits	<u>SEE REMARK #2</u>
Recycle	<u>✓</u>

HEAT EXCHANGE.

	<u>#1</u>	<u>#2</u>
Low Coolant Temp.	<u>✓</u>	<u>✓</u>
Low Temp.	<u>✓</u>	<u>✓</u>
High Temp.	<u>✓</u>	<u>✓</u>

EXCITER.

Modulator Trans.	<u> </u>	IN OPERATIVE ✓
Modulator Fail	<u> </u>	IN OPERATIVE ✓
High VSWR	<u>✓</u>	
Low VSWR	<u>✓</u>	

RECEIVER "A" FI 1 FI 2

Radio Pilot	<u>✓</u>	<u>✓</u>
Noise Amplifier	<u>✓</u>	<u>✓</u>

Receiver "B" FI 1 FI 2

Radio Pilot	<u>✓</u>	<u>✓</u>
Noise Amplifier	<u>✓</u>	<u>✓</u>

~~XXXXXXXX~~

DATE

6-9-63

TESTER

SUPERVISOR

QUALITY ASSURANCE

E. Hall

R. Westwood

R. B. Spence

H.R.P.

7-7

IR-E

AIR CONDITIONERS

I R EAST VAN

Serial # 3664 Hours 7827.8

10 June 1963

	Air Conditioning	Ventilation	Heating
Auto	<u>OK</u>	<u>OK</u>	<u>OK</u>
Manual	<u>OK</u>	<u>OK</u>	<u>OK</u>

Remarks:

Serial # 3675 Hours 0352.4

	Air Conditioning	Ventilation	Heating
Auto	<u>OK</u>	<u>OK</u>	<u>OK</u>
Manual	<u>OK</u>	<u>OK</u>	<u>OK</u>

Date
Tested
Inspected by
Quality Assurance

6-9-63
E. H. H. H.
R. W. H. H.
R. B. S. H.
SRP

IC-W

BRIEF SUPPLEMENTAL TEST DATA SHEET

A. M-58 Air Conditioner check

1. Manual Operation
2. Automatic Operation
3. Other None

OK ☒
OK ☒
OK ☐

Remarks:

Tester
S.S.
QA

Walter Craig
F.H. Gayardo
Willard R. Nitz

B. Andrews Dehydrator Check

1. Pressuration Test
2. Other

Min of 20 Sec
before recycle

OK ☒
OK ☒

Remarks: Does not meet $\frac{1}{2}$ Hr. pressure
leak test

Tester
S.S.
QA

Robert D. Leifer
F.H. Gayardo
Willard R. Nitz

C. Rel Fault Indicator Checks

1. Alarm Tests
2. Other

OK ☒
OK ☐

Remarks:

Tester
S.S.
QA

Robert D. Leifer
F.H. Gayardo
Willard R. Nitz

D. Dummy Load

1. Operational Check
2. Other

OK ☒
OK ☒

Remarks:

Tester
S.S.
QA

Robert D. Leifer
F.H. Gayardo
Willard R. Nitz

7-9

BRII SUPPLEMENTAL TEST DATA SHEET

IC-E

A. M-58 Air Conditioner check

1. Manual Operation
2. Automatic Operation
3. Other UNIT #3665,

OK ☒

OK ☒

OK ☒

Remarks: LEAKS IN PUMP AREA, NEEDS ✓
FREON RECHARGE.

Tester *J. E. Dugan*
S.S. *J. H. Laperdo*
QA *William R. Hitt*
GEEIA *Robert A. Legler*

B. Andrews Dehydrator Check

1. ~~Preparation Test~~
Meet 20 Sec. recycle test but leaks
are evident. ✓
2. Other

Min of 20 Sec.
before recycle

OK ☒

OK ☐

Remarks:

Tester *J. E. Dugan*
S.S. *J. H. Laperdo*
QA *William R. Hitt*
GEEIA *Robert A. Legler*

C. Rel Fault Indicator Checks

1. Alarm Tests
2. Other

OK ☒

OK ☐

Remarks:

Tester *J. E. Dugan*
S.S. *J. H. Laperdo*
QA *William R. Hitt*
GEEIA *Robert A. Legler*

D. Dummy Load

1. Operational Check
2. Other

OK ☒

OK ☐

Remarks:

Tester *J. E. Dugan*
S.S. *J. H. Laperdo*
QA *William R. Hitt*
GEEIA *Robert A. Legler*

GK-W

SAFETY DEVICES

GK VAN WEST

INTERLOCKS

PA # 1 O.K. S/N 001
PA #2 O.K. S/N 002

PA. SHORTING STICK

O.K.

RCVR #1 O.K.
RCVR #2 O.K.
RCVR #3 O.K.
RCVR #4 O.K.

EXC. #1 O.K.
EXC. #2 O.K.

REMARKS:

FAULT INDICATOR PANELS

PWR AMP.

	<u>FI. 1</u>	<u>FI. 2</u>
FIL CHY OVER	<u>O.K.</u>	<u>O.K.</u>
CAB TEMP	<u>NG.</u>	<u>NG.</u>
ALARM PS FAIL	<u>O.K.</u>	<u>O.K.</u>
HIGH VSWR	<u>O.K.</u>	<u>O.K.</u>
LOW FWD PWR	<u>O.K.</u>	<u>O.K.</u>
FIL REG LIMITS	<u>O.K.</u>	<u>O.K.</u>
RECYCLE	<u>O.K.</u>	<u>O.K.</u>

HEAT EXCHANGE

	<u>#1</u>	<u>#2</u>
LOW COOLANT TEMP.	<u>O.K.</u>	<u>O.K.</u>
LOW TEMP.	<u>O.K.</u>	<u>O.K.</u>
HIGH TEMP.	<u>O.K.</u>	<u>O.K.</u>

	<u>#1</u>	<u>#2</u>
EXCITER	<u>O.K.</u>	<u>O.K.</u>
MODULATOR TANS.	<u>O.K.</u>	<u>O.K.</u>
MODULATOR FAIL.	<u>O.K.</u>	<u>O.K.</u>
HIGH VSWR	<u>O.K.</u>	<u>O.K.</u>
LOW VSWR	<u>O.K.</u>	<u>O.K.</u>

RECEIVER "A"

FI 1 FI 2

RADIO PILOT O.K. O.K.
NOISE AMPLIFIER O.K. O.K.

RECEIVER "B"

FI 1 FI 2

RADIO PILOT O.K. O.K.
NOISE AMPLIFIER O.K. O.K.

DATE 30 June 13
TESTER [Signature]
SUPERVISOR [Signature]
QUALITY ASSURANCE [Signature]
GEEIA [Signature]

GK-W

AIR CONDITIONERS

GK J. E. Van.

SERIAL # 3660

HOURS Not Operational

AIR CONDITIONING

VENTILATION

HEATING

AUTO

O.K.

O.K.

O.K.

MANUAL

O.K.

O.K.

O.K.

REMARKS:

SERIAL # 3661

HOURS 7759

AIR CONDITIONING

VENTILATION

HEATING

AUTO

O.K.

O.K.

O.K.

MANUAL

O.K.

O.K.

O.K.

REMARKS:

DATE 23 June 63
 TESTED [Signature]
 SUPERVISOR [Signature]
 QUALITY ASSURANCE [Signature]
 GEEIA [Signature]

GK-W

DEHYDRATOR PRESSURIZATION UNIT

GK VAN WEST

Water Ant. #2

PRESS. AT BEGINNING OF TEST: 6.5 6.5

PRESS. AFTER ONE HOUR: 4.0 4.0

PRESS. DROP: 2.5 2.5

REMARKS:

GK VAN EAST

Water Ant. #2

PRESS. AT BEGINNING OF TEST: 5.5 6.25

PRESS. AFTER ONE HOUR: 3.5 4.0

PRESS. DROP: 4.75 2.25

INCHES OF WATER:

REMARKS: *PRESSURE DROP IS EXCESSIVE
ON Antenna #1*

DATE

4/6/63

TESTER

[Signature]

SUPERVISOR

[Signature]

QUALITY ASSURANCE

[Signature]

GEEIA

[Signature]



GK-W

DUMMY LOAD

OPERATING AND CALIBRATION INSTRUMENT AVAILABLE:

YES

NO

GK VAN WEST

PA #1 O.K.

PA #2 O.K. S/N 002

GK VAN EAST

PA #1 OK

PA #2 OK

ALERTING UNIT OPERATION

GK VAN WEST

LOCAL ALARM O.K.

POWER ALARM O.K.

REMOTE CE ALARM O.K.

REMOTE POWER ALARM

GK VAN EAST

LOCAL ALARM O.K.

POWER ALARM O.K.

REMOTE CE ALARM O.K.

REMOTE POWER ALARM O.K.

DATE 1 July 63
TESTER
SUPERVISOR
QUALITY ASSURANCE
GEEIA

GK-E

AIR CONDITIONERS

GK - (67)

SERIAL # 3666

HOURS 8587

AIR CONDITIONING

VENTILATION

HEATING

AUTO

O.K.

O.K.

O.K.

MANUAL

O.K.

O.K.

O.K.

REMARKS:

SERIAL # 3667

HOURS 8295

AIR CONDITIONING

VENTILATION

HEATING

AUTO

O.K.

O.K.

O.K.

MANUAL

O.K.

O.K.

O.K.

REMARKS:

DATE 30 June 63
TESTED J. A. Schmitt
SUPERVISOR W. E. Carter
QUALITY ASSURANCE W. E. Carter
GEEIA



7-15

GK-E

GK EAST

MAIN LINE CURRENTS

PA #1 CIRCUIT BREAKER 125 AMPS

PHASE 1

I = 0 E Drop
87 *

PHASE 2

I = 0 E Drop
73

PHASE 3

I = 0 E Drop
74

PA #2 CIRCUIT BREAKER 125 AMPS

PHASE 1

I = 0 E Drop
77

PHASE 2

I = 0 E Drop
81

PHASE 3

I = 0 E Drop
83

"MAIN" CIRCUIT BREAKER 200 AMPS

PHASE 1

I = $\frac{3}{20}$ E Drop
152

PHASE 2

I = $\frac{1}{50}$ E Drop
161

PHASE 3

I = $\frac{3}{20}$ E Drop
135

** E Drop = Drop across breaker

PHASE I PHASE II PHASE III 500 VAX MAIN CIRCUIT BREAKER 200 AMP
I = 135 I = 140 I = 135

Min Conditioner Unit II 100 AMPS

PHASE I PHASE II PHASE III
I = 64 I = 66 I = 68

RE Carter Tester
RE Carter Site Supervisor
1963 Quality Assurance

3 July 63
J. P. Carter

GK WEST

GK-E

MAIN LINE CURRENTS

PA #1 CIRCUIT BREAKER 125 AMPS

PHASE 1

I= 0 E Drop

PHASE 2

I= 0 E Drop

PHASE 3

I= 0 E Drop

PA #2 CIRCUIT BREAKER 125 AMPS

PHASE 1

I= 0 E Drop

PHASE 2

I= 0 E Drop

PHASE 3

I= 0 E Drop

"MAIN" CIRCUIT BREAKER 200 AMPS

PHASE 1

I= $\frac{1}{100}$ E Drop

PHASE 2

I= $\frac{1}{100}$ E Drop

PHASE 3

I= $\frac{1}{100}$ E Drop

* E Drop = Drop across breaker

R.E. Carter GEEIA
Tester
R.E. Carter Site Supervisor
R.E. Carter Quality Assurance

27 June 63

GA

SAFETY DEVICES

SITE GA MRC-85

INTERLOCKS

PA #1	<u>WDT</u>	PF MON #1	<u>WDT</u>
PA #2	<u>WDT</u>	PF MON #2	<u>WDT</u>
ETLC #1	<u>WDT</u>	EXC #1	<u>WDT</u>
ETLC #2	<u>WDT</u>	EXC #2	<u>WDT</u>
RCVR #1	<u>WDT</u>		
RCVR #2	<u>WDT</u>		
RCVR #3	<u>WDT</u>		
RCVR #4	<u>WDT</u>		

SHORTING STICKS

PA #1	<u>WDT</u>
PA #2	<u>WDT</u>

FAULT INDICATORS PANELS

<u>POWER AMPLIFIER</u>	<u>#1</u>	<u>#2</u>
FIL CHG OVER	<u>WDT</u>	<u>WDT</u>
CAB TEMP	<u>WDT</u>	<u>WDT</u>
ALARM PS FAILURE	<u>WDT</u>	<u>WDT</u>
HIGH VSWR	<u>WDT</u>	<u>WDT</u>
LOW FWD POWER	<u>WDT</u>	<u>WDT</u>
FILAMENT REG LIM	<u>WDT</u>	<u>WDT</u>
RECYCLE	<u>WDT</u>	<u>WDT</u>

<u>HEAT EXCHANGER</u>	<u>#1</u>	<u>#2</u>
LOW COOLANT LEVEL	<u>WDT</u>	<u>WDT</u>
LOW TEMP	<u>WDT</u>	<u>WDT</u>
HIGH TEMP	<u>WDT</u>	<u>WDT</u>

<u>EXCITER</u>	<u>#1</u>	<u>#2</u>
MODULATOR TRANSFER	<u>WDT</u>	<u>WDT</u>
MODULATOR FAIL	<u>INOP</u>	<u>INOP</u>
HIGH VSWR	<u>WDT</u>	<u>WDT</u>
LOW RF	<u>WDT</u>	<u>WDT</u>

<u>RECEIVER "A"</u>	<u>FI-1</u>	<u>FI-2</u>
RADIO PILOT	<u>WDT</u>	<u>WDT</u>
NOISE AMPL	<u>WDT</u>	<u>WDT</u>

<u>RECEIVER "B"</u>	<u>FI-1</u>	<u>FI-2</u>
RADIO PILOT	<u>WDT</u>	<u>WDT</u>
NOISE AMPL	<u>WDT</u>	<u>WDT</u>

ALERTING UNIT OPERATION

<u>MRC-85 VAN</u>	
LOCAL ALARM	<u>KG</u>
POWER ALARM	<u>KG</u>
REMOTE CE ALARM	<u>KG</u>

<u>LOS BLDG</u>	
LOCAL ALARM	<u>KG</u>
POWER ALARM	<u>KG</u>
REMOTE CE ALARM	<u>KG</u>

<u>GEN VAN</u>	
REMOTE CE ALARM	<u>KG</u>

DETEER

DATE

TESTER

SUPERVISOR

QUALITY ASSURANCE

GEEIA

8 July 1963

W.D. Taylor
K.H. [unclear]
[unclear]
[unclear]
[unclear]

GA

AIR CONDITIONERS
SITE GA MRC-85

SERIAL # 3674 HOURS 7970

	<u>AIR CONDITIONING</u>	<u>VENTILATION</u>	<u>HEATING</u>
AUTO:	<u>CWM</u>	<u>CWM</u>	<u>CWM</u>
MANUAL:	<u>CWM</u>	<u>CWM</u>	<u>CWM</u>
REMARKS:			

SERIAL # 3663 HOURS 9775

	<u>AIR CONDITIONING</u>	<u>VENTILATION</u>	<u>HEATING</u>
AUTO:	<u>CWM</u>	<u>CWM</u>	<u>CWM</u>
MANUAL:	<u>CWM</u>	<u>CWM</u>	<u>CWM</u>

DEHYDRATOR PRESSURIZATION UNIT

PRESS. AT BEGINNING OF TEST: _____

PRESS. AFTER ONE HOUR: _____

PRESS. DROP: _____

REMARKS: PA #1, RCVR #1, RCVR #2 Lines hold pressure within Specs.
PA #2, RCVR #3, RCVR #4 Lines will not hold pressure within Specs. ✓

DEHYDRATOR PUMPS UP TO SUPPLY PRESSURE EVERY 45 SECONDS. ✓

DUMMY LOAD

CALIBRATION	<u>WDT</u>
OPERATION	<u>WDT</u>

REMARKS:

DATE 12 July 1963
 TESTER C. W. Mahlen
 SUPERVISOR [Signature]
 QUALITY ASSURANCE [Signature]
 GEEIA [Signature]

BIG RALLY II PROJECT - DEHYDRATOR PRESSURE CHECK

STATION GPA

14 July 1963

GPA-GA ANTENNA A GA

PRESS AT START .0.22
PRESS AT 1/2 HR. .215
TOTAL PRESS DROP .005 lbs/in.²

ANTENNA B GA

PRESS AT START .22
PRESS AT 1/2 HR. .03
TOTAL PRESS DROP .19

GPA-GAB ANTENNA A GAB

PRESS AT START .22
PRESS AT 1/2 HR. .215
TOTAL PRESS DROP .005

ANTENNA B GAB

PRESS AT START .22
PRESS AT 1/2 HR. .075
TOTAL PRESS DROP .145

n.b.: All figures are
given in lbs/sq. ins.

DATE 15 July 63

TESTER Vincent Quinn

SUPERVISOR J. W. Quinn

QUALITY ASSURANCE W. C. J.

GEBIA S. P. Quinn

7-20

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

BRH/101

STATION LD.

1. FREQUENCY (See Para. 7)

Generator I

Name Plate Frequency 60 cps

A. Steady State Load

Minimum Frequency Reading 60 cps
Maximum Frequency Reading 60 cps

B. Sudden Change - Full Load to No Load

Minimum Frequency 59 cps
Maximum Frequency 60 cps
Recovery Time 2 Seconds

C. Sudden Change - No Load to Full Load

Minimum Frequency 60 cps
Maximum Frequency 60 cps
Recovery Time 1 Seconds

Generator II

Name Plate Frequency 60 cps

A. Steady State Load

Minimum Frequency Reading 60 cps
Maximum Frequency Reading 60 cps

B. Sudden Change - Full Load to No Load

Minimum Frequency 59 cps
Maximum Frequency 61 cps
Recovery Time 2 Seconds

C. Sudden Change - No Load to Full Load

Minimum Frequency 60 cps
Maximum Frequency 60 cps
Recovery Time 1 Seconds

DATE 9 June 63

TESTER W. M. Mah...

SUPERVISOR R. E. Gibbs

QUALITY ASSURANCE B. E. Be...

Walter L Craig

FEDERAL ELECTRIC CORPORATION BR11/102
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

STATION 1.D

2. LOAD BALANCE (See Para. 8)

Generator	Test I	Test II(Corrected Unbalance)
Phase I		
Amperes	<u>370</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>38400</u>	<u> </u>
Phase II		
Amperes	<u>375</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>45000</u>	<u> </u>
Phase III		
Amperes	<u>340</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>40800</u>	<u> </u>
Generator II		
Phase I		
Amperes	<u>340</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>40800</u>	<u> </u>
Phase II		
Amperes	<u>350</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>42000</u>	<u> </u>
Phase III		
Amperes	<u>320</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>38400</u>	<u> </u>

DATE 8 June 63

TESTER W. L. Craig

SUPERVISOR R. E. H. H. H.

QUALITY ASSURANCE B. E. K. K.

Walter L. Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATION SYSTEM

BRII/103

STATION LD

3. PHASING (See Para. 9)

Generator I

Phase I	<u>120</u> volts
Phase II	<u>120</u> volts
Phase III	<u>120</u> volts

Generator II

Phase I	<u>120</u> volts
Phase II	<u>120</u> volts
Phase III	<u>120</u> volts

4. NEUTRAL GROUNDING (See Para. 10)

Generator I

Ground Rod to Neutral Terminal .1 OHMS

Generator II

Ground Rod to Neutral Terminal .1 OHMS

DATE

8 JUNE 1963

TESTER

W. L. Craig

SUPERVISOR

R. E. Gellman

QUALITY ASSURANCE

B. E. Brown

Walter L. Craig

FEDERAL ELECTRIC CORPORATION

BRH/104

BIG RALLY II PROJECT

DATA SHEET

150 KW DIESEL GENERATOR SYSTEM

STATION 1. D.

5. TERMINAL VOLTAGE (See Para. II)

Percent Voltage Drop $\left(\frac{\text{Generator Panel Board Voltage} - \text{Terminal Voltage}}{\text{Generator Panel Board Voltage}} \times 100\% \right)$

3 Phase 208 Volts

		Generator Panel Board Volt.		Term. Volts		% Volt Drop	
		#1	#2	#1	#2	#1	#2
Feeder I	Phase 1 & 2	210	212	210	210	0	2
	Phase 2 & 3	210	213	210	210	0	3
	Phase 3 & 1	210	212	210	200	0	2
	Phase 1 to Neutral	120	120	117	117	2	3
	Phase 2 to Neutral	120	120	117	117	2	3
	Phase 3 to Neutral	120	120	118	118	2	2
Feeder II	Phase 1 & 2	210	212	209	209	1	3
	Phase 2 & 3	210	213	210	210	0	3
	Phase 3 & 1	210	212	209	209	1	3
	Phase 1 to Neutral	120	120	119	119	1	1
	Phase 2 to Neutral	120	120	119	119	1	1
	Phase 3 to Neutral	120	120	119	119	1	1
Feeder III	Phase 1 & 2	210	212	209	209	1	3
	Phase 2 & 3	210	213	209	209	1	4
	Phase 3 & 1	210	212	210	210	0	2
	Phase 1 to Neutral	120	120	118	118	2	2
	Phase 2 to Neutral	120	120	118	118	2	2
	Phase 3 to Neutral	120	120	119	119	1	1

DATE 8 June 63TESTER W. L. CraigSUPERVISOR R. F. AtkinsQUALITY ASSURANCE B. E. BrownWalter L Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

BRH/105

STATION LD

6. GENERATOR TRANSFER OPERATION (See Para. 12)

Generator I

	Normal Operating Conditions	Conditions New Duty Unit After Transfer
Voltage	<u>120</u>	<u>120</u>
Amperage	<u>300</u>	<u>300</u>
Wattage	<u>100 KW</u>	<u>80 KW</u>
Frequency	<u>60 CPS</u>	<u>60 CPS</u>

Time in Seconds to Effect Transfer 18 seconds.

Generator II

	Normal Operating Conditions	Conditions New Duty Unit After Transfer
Voltage	<u>120</u>	<u>120</u>
Amperage	<u>300</u>	<u>250</u>
Wattage	<u>80 KW</u>	<u>40 KW</u>
Frequency	<u>60 CPS</u>	<u>60 CPS</u>

Time in Seconds to Effect Transfer 15 seconds.

DATE 9-June, 63

TESTER [Signature]

SUPERVISOR [Signature]

QUALITY ASSURANCE [Signature]

Walter L. Craig

FEDERAL ELECTRIC CORPORATION

BRII/106

BIG RALLY II PROJECT

DATA SHEET

150 KW DIESEL GENERATING SYSTEM

STATION L.D.

7. PARALLELING TEST (See Para. 13)

Generator I (After Paralleling)

Amps	<u>140</u>	Amps
Watts	<u>51 K</u>	Watts
Volts	<u>114</u>	Volts
Frequency	<u>60</u>	CPS
Tachometer Reading	<u> </u>	RPM

Generator II (After Paralleling)

Amps	<u>140</u>	Amps
Watts	<u>55 K</u>	Watts
Volts	<u>114</u>	Volts
Frequency	<u>60</u>	CPS
Tachometer Reading	<u> </u>	RPM

DATE 8 June 63

TESTER George L. L.

SUPERVISOR R. E. Gibbons

QUALITY ASSURANCE J. E. Brown

Walter L. Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

BR11/101

STATION IR - WEST

1. FREQUENCY (See Para. 7)

Generator I

Name Plate Frequency 60 cps

A. Steady State Load

Minimum Frequency Reading 60 cps
Maximum Frequency Reading 60 cps

B. Sudden Change - Full Load to No Load

Minimum Frequency 59 cps
Maximum Frequency 60 cps
Recovery Time 2 Seconds

C. ~~Sudden Change - No Load to Full Load~~

~~Minimum Frequency _____ cps~~
~~Maximum Frequency _____ cps~~
~~Recovery Time _____ Seconds~~

Generator II

Name Plate Frequency 60 cps

A. Steady State Load

Minimum Frequency Reading 60 cps
Maximum Frequency Reading 60 cps

B. Sudden Change - Full Load to No Load

Minimum Frequency 59 cps
Maximum Frequency 60 cps
Recovery Time 2 Seconds

C. ~~Sudden Change - No Load to Full Load~~

~~Minimum Frequency _____ cps~~
~~Maximum Frequency _____ cps~~
~~Recovery Time _____ Seconds~~

DATE 11 JUNE 1963

TESTER W. Mahlon

SUPERVISOR R. W. P. Smith

QUALITY ASSURANCE R. B. Spack

Walter L. Craig
HQ GEER

FEDERAL ELECTRIC CORPORATION BR11/102
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

STATION IR-WEST

2. LOAD BALANCE (See Para. 8)

Generator	Test I	Test II (Corrected Unbalance)
Phase I		
Amperes	<u>105</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>12600</u>	<u> </u>
Phase II		
Amperes	<u>105</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>12600</u>	<u> </u>
Phase III		
Amperes	<u>100</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>12000</u>	<u> </u>
Generator II		
Phase I		
Amperes	<u>220</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>26400</u>	<u> </u>
Phase II		
Amperes	<u>225</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>27000</u>	<u> </u>
Phase III		
Amperes	<u>210</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>25200</u>	<u> </u>

DATE 11 JUNE 1963

TESTER Edith Mahlen

SUPERVISOR R. Working

QUALITY ASSURANCE R.B. Spear

Walter L. Craig
HQ GCEIA

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATION SYSTEM

BRH/103

STATION IR - WEST

3. PHASING (See Para. 9)

Generator I

Phase I	<u>120</u> volts
Phase II	<u>120</u> volts
Phase III	<u>120</u> volts

Generator II

Phase I	<u>120</u> volts
Phase II	<u>120</u> volts
Phase III	<u>120</u> volts

4. NEUTRAL GROUNDING (See Para. 10)

Generator I

Ground Rod to Neutral Terminal .1 OHMS

Generator II

Ground Rod to Neutral Terminal .1 OHMS

DATE 11 JUNE 1963

TESTER W. Mahlen

SUPERVISOR R. W. L. L. L.

QUALITY ASSURANCE R. B. Spear

Walter L. Craig

149 GEEIA

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW DIESEL GENERATOR SYSTEM

BRH/104

STATION 1R - WEST

5. TERMINAL VOLTAGE (See Para. II)

Percent Voltage Drop $\left(\frac{\text{Generator Panel Board Voltage} - \text{Terminal Voltage}}{\text{Generator Panel Board Voltage}} \times 100\% \right)$

		3 Phase 208 Volts					
		Generator Panel Board Volt.		Term. Volts		Volt Drop	
		#1	#2	#1	#2	#1	#2
Feeder I	Phase 1 & 2	210	209	209	208	1	1
	Phase 2 & 3	211	210	210	208	1	3
	Phase 3 & 1	211	207	210	208	1	1
	Phase 1 to Neutral	120	120	119	117	1	1
	Phase 2 to Neutral	120	120	119	117	1	1
	Phase 3 to Neutral	120	120	119	117	1	1
Feeder II	Phase 1 & 2	210	209	209	208	1	1
	Phase 2 & 3	211	210	210	208	1	3
	Phase 3 & 1	211	207	210	208	1	1
	Phase 1 to Neutral	120	120	119	117	1	1
	Phase 2 to Neutral	120	120	119	117	1	1
	Phase 3 to Neutral	120	120	119	117	1	1
Feeder III	Phase 1 & 2	210	209	210	209	0	0
	Phase 2 & 3	211	210	211	210	0	0
	Phase 3 & 1	210	209	210	209	0	0
	Phase 1 to Neutral	120	120	119	121	1	+1
	Phase 2 to Neutral	120	120	119	121	1	+1
	Phase 3 to Neutral	120	120	119	123	1	+2

DATE JUNE 11, 1963

TESTER G. M. Mahlen

SUPERVISOR E. W. Williams

QUALITY ASSURANCE R. B. Spear

Walter L. Craig
HQ GEER

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

BR11/105

STATION 1 R - WEST

6. GENERATOR TRANSFER OPERATION (See Para. 12)

Generator I

	Normal Operating Conditions	Conditions New Duty Unit After Transfer
Voltage	<u>120</u>	<u>120</u>
Amperage	<u>330</u>	<u>330</u>
Wattage	<u>110 KW</u>	<u>110 KW</u>
Frequency	<u>60</u>	<u>60</u>

Time in Seconds to Effect Transfer 9 seconds.

Generator II

	Normal Operating Conditions	Conditions New Duty Unit After Transfer
Voltage	<u>120</u>	<u>120</u>
Amperage	<u>340</u>	<u>340</u>
Wattage	<u>105 KW</u>	<u>105 KW</u>
Frequency	<u>60</u>	<u>60</u>

Time in Seconds to Effect Transfer 14 seconds.

DATE 11 JUNE, 1963

TESTER C. W. Mahlen

SUPERVISOR R. Westling

QUALITY ASSURANCE R. B. Spear

Walter L. Craig
169 GCEIA

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW DIESEL GENERATING SYSTEM

BRII/106

STATION IR-W

7. PARALLELING TEST (See Para. 13)

Generator I (After Paralleling)

Amps	<u>100</u>	Amps
Watts	<u>17 KW</u>	Watts
Volts	<u>120</u>	Volts
Frequency	<u>60</u>	CPS
Tachometer Reading	<u> </u>	RPM

Generator II (After Paralleling)

Amps	<u>70</u>	Amps
Watts	<u>17 KW</u>	Watts
Volts	<u>120</u>	Volts
Frequency	<u>60</u>	CPS
Tachometer Reading	<u> </u>	RPM

DATE 11 JUNE, 1963

TESTER C.W. Mahlen

SUPERVISOR L. Worlein

QUALITY ASSURANCE R.B. Spar

Walter L. Craig
HQ GEEIA

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

BRII/101

STATION 1. R. - E

1. FREQUENCY (See Para. 7)

Generator I

Name Plate Frequency

60 cps

A. Steady State Load

Minimum Frequency Reading

60 cps

Maximum Frequency Reading

60 cps

B. Sudden Change - Full Load to No Load

Minimum Frequency

59 cps

Maximum Frequency

61 cps

Recovery Time

2 Seconds

C. Sudden Change - No Load to Full Load

Minimum Frequency

60 cps

Maximum Frequency

60 cps

Recovery Time

2 Seconds

Generator II

Name Plate Frequency

60 cps

A. Steady State Load

Minimum Frequency Reading

60 cps

Maximum Frequency Reading

60 cps

B. Sudden Change - Full Load to No Load

Minimum Frequency

59 cps

Maximum Frequency

61 cps

Recovery Time

2 Seconds

C. Sudden Change - No Load to Full Load

Minimum Frequency

60 cps

Maximum Frequency

60 cps

Recovery Time

2 Seconds

DATE 11-JUNE, 1953

TESTER G. W. Maflon

SUPERVISOR R. W. Waring

QUALITY ASSURANCE R. B. Seear

Walter L. Craig
H. GEEIA

FEDERAL ELECTRIC CORPORATION BR11/102
BIG RALLY II PROJECT
DATA SHEET

150 KW POWER GENERATING SYSTEM

STATION 1R-F

2. LOAD BALANCE (See Para. 8)

Generator	Test I	Test II(Corrected Unbalance)
Phase I		
Amperes	<u>240</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>28800</u>	<u> </u>
Phase II		
Amperes	<u>235</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>28200</u>	<u> </u>
Phase III		
Amperes	<u>225</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>27000</u>	<u> </u>
Generator II		
Phase I		
Amperes	<u>265</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>31800</u>	<u> </u>
Phase II		
Amperes	<u>265</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>31800</u>	<u> </u>
Phase III		
Amperes	<u>240</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>28800</u>	<u> </u>

DATE 11 June 63

TESTER LWMahlen

SUPERVISOR R W. W. W.

QUALITY ASSURANCE R B. Sear

Walter L Craig
149 GELIA

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATION SYSTEM

BRH/103

STATION IR-F

3. PHASING (See Para. 9)

Generator I

Phase I	<u>120</u> volts
Phase II	<u>120</u> volts
Phase III	<u>120</u> volts

Generator II

Phase I	<u>120</u> volts
Phase II	<u>120</u> volts
Phase III	<u>120</u> volts

4. NEUTRAL GROUNDING (See Para. 10)

Generator I

Ground Rod to Neutral Terminal .1 OHMS

Generator II

Ground Rod to Neutral Terminal .1 OHMS

DATE 11 June 63

TESTER L. W. Mahan

SUPERVISOR R. W. Wiering

QUALITY ASSURANCE R. B. Spear

Walter L. Craig
Hq GECIA

FEDERAL ELECTRIC CORPORATION

BRH/104

BIG RALLY II PROJECT

DATA SHEET

150 KW DIESEL GENERATOR SYSTEM

STATION L.R.F.

5. TERMINAL VOLTAGE (See Para. II)

Percent Voltage Drop $\left(\frac{\text{Generator Panel Board Voltage} - \text{Terminal Voltage}}{\text{Generator Panel Board Voltage}} \times 100\% \right)$

3 Phase 208 Volts

		Generator Panel Board Volt.		Term. Volts		% Volt Drop	
		#1	#2	#1	#2	#1	#2
Feeder I	Phase 1 & 2	211	211	210	210	.5	.5
	Phase 2 & 3	213	213	211	210	1.	1.
	Phase 3 & 1	213	211	210	210	1.	.5
	Phase 1 to Neutral	120	120	119	119	1.	1.
	Phase 2 to Neutral	120	120	119	119	1.	1.
	Phase 3 to Neutral	120	120	119	119	1.	1.
Feeder II	Phase 1 & 2	211	211	210	210	.5	.5
	Phase 2 & 3	213	213	212	211	1.	.5
	Phase 3 & 1	213	211	210	210	1.	1.
	Phase 1 to Neutral	120	120	119	119	1.	1.
	Phase 2 to Neutral	120	120	119	119	.5	.5
	Phase 3 to Neutral	120	120	119	119	1.	1.
Feeder III	Phase 1 & 2	211	211	210	210	.5	.5
	Phase 2 & 3	213	213	212	211	.5	.5
	Phase 3 & 1	213	211	210	210	1.	1.
	Phase 1 to Neutral	120	120	119	119	1.	1.
	Phase 2 to Neutral	120	120	119	119	.5	.5
	Phase 3 to Neutral	120	120	119	119	1.	1.

DATE 11-June-63TESTER W. MahlerSUPERVISOR R. W. DeaneQUALITY ASSURANCE R. B. Sear

Walter L. Craig
HQ GEEIA

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

BR11/105

STATION L.R. - F.

6. GENERATOR TRANSFER OPERATION (See Para. 12)

Generator I

	Normal Operating Conditions	Conditions New Duty Unit After Transfer
Voltage	<u>120</u>	<u>120</u>
Amperage	<u>310</u>	<u>300</u>
Wattage	<u>110 KW</u>	<u>105 KW</u>
Frequency	<u>60</u>	<u>60</u>

Time in Seconds to Effect Transfer 14 seconds.

Generator II

	Normal Operating Conditions	Conditions New Duty Unit After Transfer
Voltage	<u>120</u>	<u>120</u>
Amperage	<u>300</u>	<u>300</u>
Wattage	<u>110 KW</u>	<u>105 KW</u>
Frequency	<u>60</u>	<u>60</u>

Time in Seconds to Effect Transfer 15 seconds.

DATE 11-JUNE-63
TESTER Ed Mallon
SUPERVISOR R. W. Linn
QUALITY ASSURANCE R B Spear

Walter L. Craig
Hq GEEIA

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW DIESEL GENERATING SYSTEM

BRII/106

STATION 1. R. E.

7. PARALLELING TEST (See Para. 13)

Generator I (After Paralleling)

Amps	<u>140</u>	Amps
Watts	<u>40</u>	Watts
Volts	<u>120</u>	Volts
Frequency	<u>60</u>	CPS
Tachometer Reading		RPM

Generator II (After Paralleling)

Amps	<u>180</u>	Amps
Watts	<u>50</u>	Watts
Volts	<u>120</u>	Volts
Frequency	<u>60</u>	CPS
Tachometer Reading		RPM

DATE 11 JUNE 63

TESTER W. M. Allen

SUPERVISOR R. W. Long

QUALITY ASSURANCE R. B. Spear

Walter L. Craig

HP GEEIA

ICW
FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

BR11/101

STATION 1C West

1. FREQUENCY (See Para. 7)

Generator I

Name Plate Frequency 60 cps

A. Steady State Load

Minimum Frequency Reading 60 cps
Maximum Frequency Reading 60 cps

B. Sudden Change - ^{125 Kw} ~~Full~~ Load to No Load

Minimum Frequency 59 cps
Maximum Frequency 61 cps
Recovery Time 2 Seconds

C. ~~Sudden Change - No Load to Full Load~~

~~Minimum Frequency~~ ~~_____~~ cps
~~Maximum Frequency~~ ~~_____~~ cps
~~Recovery Time~~ ~~_____~~ Seconds

Generator II

Name Plate Frequency 60 cps

A. Steady State Load

Minimum Frequency Reading 60 cps
Maximum Frequency Reading 60 cps

B. Sudden Change - ^{125 Kw} ~~Full~~ Load to No Load

Minimum Frequency 59 cps
Maximum Frequency 61 cps
Recovery Time 2 Seconds

C. ~~Sudden Change - No Load to Full Load~~

~~Minimum Frequency~~ ~~_____~~ cps
~~Maximum Frequency~~ ~~_____~~ cps
~~Recovery Time~~ ~~_____~~ Seconds

DATE 14 June 1963

TESTER CM Allen

SUPERVISOR JH Galardo

QUALITY ASSURANCE William B. Zolt

GEEIA Walter J. Berg

FEDERAL ELECTRIC CORPORATION BRII/102
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

STATION IC WEST

2. LOAD BALANCE (See Para. 8)

Generator	<u>Test I</u>	<u>Test II (Corrected Unbalance)</u>
Phase I		
Amperes	<u>210</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>35400</u>	<u> </u>
Phase II		
Amperes	<u>305</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>36600</u>	<u> </u>
Phase III		
Amperes	<u>290</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>34800</u>	<u> </u>
Generator II		
Phase I		
Amperes	<u>295</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>35400</u>	<u> </u>
Phase II		
Amperes	<u>300</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>36000</u>	<u> </u>
Phase III		
Amperes	<u>290</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>34800</u>	<u> </u>

DATE 14 June 62
 TESTER [Signature]
 SUPERVISOR F. H. [Signature]
 QUALITY ASSURANCE [Signature]
 GEEIA Walter J. Raig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATION SYSTEM

BRII/103

STATION IC WEST

3. PHASING (See Para. 9)

Generator I

Phase I	<u>120</u> volts
Phase II	<u>120</u> volts
Phase III	<u>120</u> volts

Generator II

Phase I	<u>120</u> volts
Phase II	<u>120</u> volts
Phase III	<u>120</u> volts

4. NEUTRAL GROUNDING (See Para. 10)

Generator I

Ground Rod to Neutral Terminal 0.1 OHMS

Generator II

Ground Rod to Neutral Terminal 0.1 OHMS

DATE 14 June 63

TESTER [Signature]

SUPERVISOR F. H. [Signature]

QUALITY ASSURANCE W. H. [Signature]

GEEIA Walter L. [Signature]

FEDERAL ELECTRIC CORPORATION

BRH/104

BIG RALLY II PROJECT

DATA SHEET

150 KW DIESEL GENERATOR SYSTEM

STATION IC WEST

5. TERMINAL VOLTAGE (See Para. II)

Percent Voltage Drop $\left(\frac{\text{Generator Panel Board Voltage} - \text{Terminal Voltage}}{\text{Generator Panel Board Voltage}} \times 100\% \right)$

		3 Phase 208 Volts			
		Generator Panel Board Volt.		Term. Volts	% Volt Drop
Feeder I	Phase 1 & 2	208	208	208	208
	Phase 2 & 3	208	208	208	208
	Phase 3 & 1	208	208	208	208
	Phase 1 to Neutral	120	120	120	120
	Phase 2 to Neutral	120	120	120	120
	Phase 3 to Neutral	120	120	120	120
Feeder II	Phase 1 & 2	208	208	208	208
	Phase 2 & 3	208	208	208	208
	Phase 3 & 1	208	208	208	208
	Phase 1 to Neutral	120	120	120	120
	Phase 2 to Neutral	120	120	120	120
	Phase 3 to Neutral	120	120	120	120
Feeder III	Phase 1 & 2	208	208	208	208
	Phase 2 & 3	208	208	208	208
	Phase 3 & 1	208	208	208	208
	Phase 1 to Neutral	120	120	120	120
	Phase 2 to Neutral	120	120	120	120
	Phase 3 to Neutral	120	120	120	120
		1	2	1	2

DATE 14 June 1963TESTER C. MahanSUPERVISOR F. J. GiaroloQUALITY ASSURANCE W. H. D. PostGEEIA Walter L. Raig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

BRII/105

STATION IC WEST

6. GENERATOR TRANSFER OPERATION (See Para. 12)

Generator I

	Normal Operating Conditions	Conditions New Duty Unit After Transfer
Voltage	<u>120</u>	<u>120</u>
Amperage	<u>245</u>	<u>245</u>
Wattage	<u>95 KW</u>	<u>95 KW</u>
Frequency	<u>60</u>	<u>60</u>

Time in Seconds to Effect Transfer 14 seconds.

Generator II

	Normal Operating Conditions	Conditions New Duty Unit After Transfer
Voltage	<u>120</u>	<u>120</u>
Amperage	<u>300</u>	<u>300</u>
Wattage	<u>103 KW</u>	<u>103 KW</u>
Frequency	<u>60</u>	<u>60</u>

Time in Seconds to Effect Transfer 13 seconds.

DATE 14 June 1963
TESTER elm akim
SUPERVISOR F. H. Gascara (2)
QUALITY ASSURANCE Will. R. P. 213
GEBIA Walter L. Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW DIESEL GENERATING SYSTEM

BRII/106

STATION IC WEST

7. PARALLELING TEST (See Para. 13)

Generator I (After Paralleling)

Amps	<u>105</u>	Amps
Watts	<u>25 kW</u>	Watts
Volts	<u>120</u>	Volts
Frequency	<u>60</u>	CPS
Tachometer Reading	_____	RPM

Generator II (After Paralleling)

Amps	<u>105</u>	Amps
Watts	<u>25 kW</u>	Watts
Volts	<u>120</u>	Volts
Frequency	<u>60</u>	CPS
Tachometer Reading	_____	RPM

DATE 14 June 1963
TESTER C. M. [Signature]
SUPERVISOR F. A. [Signature]
QUALITY ASSURANCE William R. [Signature]
GEEIA Walter L. Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

BRH/101

STATION IC EAST

1. FREQUENCY (See Para. 7)

Generator I

Name Plate Frequency 60 cps

A. Steady State Load

Minimum Frequency Reading 60 cps
Maximum Frequency Reading 60 cps

125kw

B. Sudden Change - Full Load to No Load

Minimum Frequency 59 cps
Maximum Frequency 61 cps
Recovery Time 2 Seconds

C. Sudden Change - No Load to Full Load

~~Minimum Frequency~~ ~~_____~~ cps
~~Maximum Frequency~~ ~~_____~~ cps
~~Recovery Time~~ ~~_____~~ Seconds

Generator II

Name Plate Frequency 60 cps

A. Steady State Load

Minimum Frequency Reading 60 cps
Maximum Frequency Reading 60 cps

125kw

B. Sudden Change - Full Load to No Load

Minimum Frequency 59 cps
Maximum Frequency 61 cps
Recovery Time 2 Seconds

C. Sudden Change - No Load to Full Load

~~Minimum Frequency~~ ~~_____~~ cps
~~Maximum Frequency~~ ~~_____~~ cps
~~Recovery Time~~ ~~_____~~ Seconds

DATE 15 June 1963

TESTER *E. M. M. M.*

SUPERVISOR *F. H. G. G. G.*

QUALITY ASSURANCE *W. H. H. H.*

GEEIA *Walter L. Craig*

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATION SYSTEM

BR11/103

STATION 1C East

3. PHASING (See Para. 9)

Generator I

Phase I	<u>120</u> volts
Phase II	<u>120</u> volts
Phase III	<u>120</u> volts

Generator II

Phase I	<u>120</u> volts
Phase II	<u>120</u> volts
Phase III	<u>120</u> volts

4. NEUTRAL GROUNDING (See Para. 10)

Generator I

Ground Rod to Neutral Terminal 0.1 OHMS

Generator II

Ground Rod to Neutral Terminal 0.1 OHMS

DATE 15 June 1963

TESTER _____

SUPERVISOR F. H. Luperdo

QUALITY ASSURANCE William R. Vitz

GEEIA Walter L. Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW DIESEL GENERATOR SYSTEM

BRH/104

STATION 1C East

5. TERMINAL VOLTAGE (See Para. II)

Percent Voltage Drop $\left(\frac{\text{Generator Panel Board Voltage} - \text{Terminal Voltage}}{\text{Generator Panel Board Voltage}} \times 100\% \right)$

		3 Phase 208 Volts			
		Generator Panel Board Volt.		Term. Volts	% Volt Drop
Feeder I	Phase 1 & 2	208	208	208	208
	Phase 2 & 3	210	208	210	208
	Phase 3 & 1	208	208	208	208
	Phase 1 to Neutral	120	120	120	120
	Phase 2 to Neutral	120	120	120	120
	Phase 3 to Neutral	120	120	120	120
Feeder II	Phase 1 & 2	208	208	208	208
	Phase 2 & 3	210	208	210	208
	Phase 3 & 1	208	208	208	208
	Phase 1 to Neutral	120	120	120	120
	Phase 2 to Neutral	120	120	120	120
	Phase 3 to Neutral	120	120	120	120
Feeder III	Phase 1 & 2	208	208	208	208
	Phase 2 & 3	210	208	210	208
	Phase 3 & 1	208	208	208	208
	Phase 1 to Neutral	120	120	120	120
	Phase 2 to Neutral	120	120	120	120
	Phase 3 to Neutral	120	120	120	120

1 2 1 2
DATE 15 June 1963

TESTER F. H. Laporte

SUPERVISOR William R. 208

QUALITY ASSURANCE Walter L. Craig

GEEIA Walter L. Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

BRH/105

STATION 1C Fast

6. GENERATOR TRANSFER OPERATION (See Para. 12)

Generator I

	Normal Operating Conditions	Conditions New Duty Unit After Transfer
Voltage	<u>120</u>	<u>120</u>
Amperage	<u>245</u>	<u>245</u>
Wattage	<u>95 KW</u>	<u>95 KW</u>
Frequency	<u>60</u>	<u>60</u>

Time in Seconds to Effect Transfer 10 seconds.

Generator II

	Normal Operating Conditions	Conditions New Duty Unit After Transfer
Voltage	<u>120</u>	<u>120</u>
Amperage	<u>245</u>	<u>245</u>
Wattage	<u>95 KW</u>	<u>95 KW</u>
Frequency	<u>60</u>	<u>60</u>

Time in Seconds to Effect Transfer 4 seconds.

DATE 15 June 1963

TESTER

SUPERVISOR

QUALITY ASSURANCE

GEEIA

F. A. Lockwood
William J. Vitz
Walter Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW DIESEL GENERATING SYSTEM

BRH/106

STATION 1C East

7. PARALLELING TEST (See Para. 13)

Generator I (After Paralleling)

Amps	<u>110</u>	Amps
Watts	<u>45</u>	Watts
Volts	<u>119</u>	Volts
Frequency	<u>60</u>	CPS
Tachometer Reading		RPM

Generator II (After Paralleling)

Amps	<u>105</u>	Amps
Watts	<u>25</u>	Watts
Volts	<u>119</u>	Volts
Frequency	<u>60</u>	CPS
Tachometer Reading		RPM

DATE 15 June 1963

TESTER _____

SUPERVISOR F. H. Gajardo

QUALITY ASSURANCE William B. [Signature]

GFEIA Walter Craig

GE-W
FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

BRH/101

STATION G.K.-I.C.

1. FREQUENCY (See Para. 7)

Generator I

Name Plate Frequency

60 cps

A. Steady State Load

Minimum Frequency Reading
Maximum Frequency Reading

60 cps
60 cps

B. Sudden Change - Full Load to No Load

Minimum Frequency
Maximum Frequency
Recovery Time

57 cps
63 cps
3 5 Seconds

~~C. Sudden Change - No Load to Full Load~~

~~Minimum Frequency~~
~~Maximum Frequency~~
~~Recovery Time~~

~~cps~~
~~cps~~
~~Seconds~~

Generator II

Name Plate Frequency

60 cps

A. Steady State Load

Minimum Frequency Reading
Maximum Frequency Reading

60 cps
60 cps

B. Sudden Change - Full Load to No Load

Minimum Frequency
Maximum Frequency
Recovery Time

59 cps
61 cps
2 Seconds

~~C. Sudden Change - No Load to Full Load~~

~~Minimum Frequency~~
~~Maximum Frequency~~
~~Recovery Time~~

~~cps~~
~~cps~~
~~Seconds~~

DATE 25 JUNE, 63

TESTER W. H. Smith

SUPERVISOR W. H. Smith

QUALITY ASSURANCE W. H. Smith

GEZIA, Walter Craig

FEDERAL ELECTRIC CORPORATION BR11/102
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

STATION G.K.-I.C.

2. LOAD BALANCE (See Para. 8)

Generator I	Test I	Test II (Corrected Unbalance)
Phase I		
Amperes	<u>135</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>16200</u>	<u> </u>
Phase II		
Amperes	<u>135</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>16200</u>	<u> </u>
Phase III		
Amperes	<u>125</u>	<u> </u>
Volts	<u>121</u>	<u> </u>
Volts x Amperes	<u>15125</u>	<u> </u>
Generator II		
Phase I		
Amperes	<u>165</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>19800</u>	<u> </u>
Phase II		
Amperes	<u>160</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>19200</u>	<u> </u>
Phase III		
Amperes	<u>150</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>18000</u>	<u> </u>

DATE 25 JUNE 63

TESTER W. H. H. Co.

SUPERVISOR W. H. H. Co.

QUALITY ASSURANCE W. H. H. Co.

Walter Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATION SYSTEM

BRH/103

STATION G.K.-I.C.

3. PHASING (See Para. 9)

Generator I

Phase I	<u>120</u> volts
Phase II	<u>120</u> volts
Phase III	<u>120</u> volts

Generator II

Phase I	<u>120</u> volts
Phase II	<u>120</u> volts
Phase III	<u>120</u> volts

4. NEUTRAL GROUNDING (See Para. 10)

Generator I

Ground Rod to Neutral Terminal 0.01 OHMS

Generator II

Ground Rod to Neutral Terminal 0.01 OHMS

DATE 25 JUNE 63

TESTER W. H. Gray

SUPERVISOR W. H. Gray

QUALITY ASSURANCE W. H. Gray

Walter Gray

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW DIESEL GENERATOR SYSTEM

BRII/104

STATION GK-4C

5. TERMINAL VOLTAGE (See Para. II)

Percent Voltage Drop $\left(\frac{\text{Generator Panel Board Voltage} - \text{Terminal Voltage}}{\text{Generator Panel Board Voltage}} \times 100\% \right)$

		3 Phase 208 Volts					
		Generator Panel Board Volt.		Term. Volts		% Volt Drop	
		#1	#2	#1	#2	#1	#2
Feeder I	Phase 1 & 2	205	205	202	202	2%	2%
	Phase 2 & 3	205	205	204	204	1%	1%
	Phase 3 & 1	205	205	202	202	2%	2%
	Phase 1 to Neutral	120	120	118	118	2%	2%
	Phase 2 to Neutral	120	120	119	119	1%	1%
	Phase 3 to Neutral	120	120	119	119	1%	1%
Feeder II	Phase 1 & 2	205	205	202	202	1%	1%
	Phase 2 & 3	205	205	204	204	1%	1%
	Phase 3 & 1	205	205	202	202	2%	2%
	Phase 1 to Neutral	120	120	117	117	2.5%	2.5%
	Phase 2 to Neutral	120	120	118	118	2%	2%
	Phase 3 to Neutral	120	120	118	118	2%	2%
Feeder III	Phase 1 & 2	205	205	204	204	1%	1%
	Phase 2 & 3	205	205	204	204	1%	1%
	Phase 3 & 1	205	205	203	203	1%	1%
	Phase 1 to Neutral	120	120	118	118	2%	2%
	Phase 2 to Neutral	120	120	119	119	1%	1%
	Phase 3 to Neutral	120	120	119	119	1%	1%

DATE 25 JUNE, 63

TESTER W. H. H. H.

SUPERVISOR W. H. H. H.

QUALITY ASSURANCE W. H. H. H.

Walter Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

BR11/105

STATION GH-I.C.

6. GENERATOR TRANSFER OPERATION (See Para. 12)

Generator I

	Normal Operating Conditions	Conditions New Duty Unit After Transfer
Voltage	<u> </u>	<u> </u>
Amperage	<u>120</u>	<u>120</u>
Wattage	<u>220</u>	<u>200</u>
Frequency	<u>75 KW</u> <u>60</u>	<u>65 KW</u> <u>60</u>
Time in Seconds to Effect Transfer	<u>20</u>	<u> </u> seconds.

Generator II

	Normal Operating Conditions	Conditions New Duty Unit After Transfer
Voltage	<u> </u>	<u> </u>
Amperage	<u>110</u>	<u>110</u>
Wattage	<u>200</u>	<u>210</u>
Frequency	<u>65 KW</u> <u>60</u>	<u>60 KW</u> <u>60</u>
Time in Seconds to Effect Transfer	<u>15</u>	<u> </u> seconds.

Tester DATE Wormald

Date TESTER 25 JUNE, 63

SUPERVISOR Russell

QUALITY ASSURANCE W. E. Brown

Walter Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW DIESEL GENERATING SYSTEM

BRII/106

STATION G.K.-I.C.

7. PARALLELING TEST (See Para. 13)

Generator I (After Paralleling)

Amps	<u>50</u>	Amps
Watts	<u>17 K</u>	Watts
Volts	<u>110</u>	Volts
Frequency	<u>60</u>	CPS
Tachometer Reading	_____	RPM

Generator II (After Paralleling)

Amps	<u>50</u>	Amps
Watts	<u>15 K</u>	Watts
Volts	<u>120</u>	Volts
Frequency	<u>60</u>	CPS
Tachometer Reading	_____	RPM

DATE 27 JUNE, 63

TESTER W. H. H. H.

SUPERVISOR W. H. H. H.

QUALITY ASSURANCE W. H. H. H.

Walter Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

BRII/101

STATION G.K.-G.A.

1. FREQUENCY (See Para. 7)

Generator I

Name Plate Frequency

60 cps

A. Steady State Load

Minimum Frequency Reading
Maximum Frequency Reading

58 cps
60 cps

0.6%
N

B. Sudden Change - Full Load to No Load

Minimum Frequency
Maximum Frequency
Recovery Time

58 cps
60 cps
2.5 Seconds

~~C. Sudden Change - No Load to Full Load~~

~~Minimum Frequency
Maximum Frequency
Recovery Time~~

~~cps
 cps
 Seconds~~

Generator II

Name Plate Frequency

60 cps

A. Steady State Load

Minimum Frequency Reading
Maximum Frequency Reading

60 cps
60 cps

B. Sudden Change - Full Load to No Load

Minimum Frequency
Maximum Frequency
Recovery Time

59.5 cps
60 cps
2.5 Seconds

~~C. Sudden Change - No Load to Full Load~~

~~Minimum Frequency
Maximum Frequency
Recovery Time~~

~~cps
 cps
 Seconds~~

DATE 25 JUNE, 1963

TESTER

SUPERVISOR

QUALITY ASSURANCE

W. P. Bass
Walter Charg

FEDERAL ELECTRIC CORPORATION B7II/102
 BIG RALLY II PROJECT
 DATA SHEET
 150 KW POWER GENERATING SYSTEM

STATION GK/GA.

2. LOAD BALANCE (See Para. 8)

Generator I	Test I	Test II (Corrected Unbalance)
Phase I		
Amperes	<u>220</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>26400</u>	<u> </u>
Phase II		
Amperes	<u>220</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>26400</u>	<u> </u>
Phase III		
Amperes	<u>200</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>24000</u>	<u> </u>
Generator II		
Phase I		
Amperes	<u>230</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>27600</u>	<u> </u>
Phase II		
Amperes	<u>225</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>27000</u>	<u> </u>
Phase III		
Amperes	<u>205</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>24600</u>	<u> </u>

DATE 25 JUNE, 63

TESTER Walter A. Gray

SUPERVISOR B. J. Bess

QUALITY ASSURANCE Walter A. Gray

FEDERAL ELECTRIC CORPORATION

BRH/103

BIG RALLY II PROJECT

DATA SHEET

150 KW POWER GENERATION SYSTEM

STATION G.K.-I.C.

3. PHASING (See Para. 9)

Generator I

Phase I	<u>120</u> volts
Phase II	<u>120</u> volts
Phase III	<u>120</u> volts

Generator II

Phase I	<u>120</u> volts
Phase II	<u>120</u> volts
Phase III	<u>120</u> volts

4. NEUTRAL GROUNDING (See Para. 10)

Generator I

Ground Rod to Neutral Terminal .01 OHMS

Generator II

Ground Rod to Neutral Terminal .01 OHMS

DATE 25 JUNE 63

TESTER W. H. Craig

SUPERVISOR W. H. Craig

QUALITY ASSURANCE W. H. Craig

Walter Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW DIESEL GENERATOR SYSTEM

BRII/104

STATION GK-GA

5. TERMINAL VOLTAGE (See Para. II)

Percent Voltage Drop $\left(\frac{\text{Generator Panel Board Voltage} - \text{Terminal Voltage}}{\text{Generator Panel Board Voltage}} \times 100\% \right)$

		3 Phase 208 Volts					
		Generator Panel Board Volt.		Term. Volts		% Volt Drop	
		#1	#2	#1	#2	#1	#2
Feeder I	Phase 1 & 2	206	206	203	203	1.5	1.5
	Phase 2 & 3	207	207	205	205	1	1
	Phase 3 & 1	205	207	200	202	2	2
	Phase 1 to Neutral	120	120	119	119	1	1
	Phase 2 to Neutral	120	120	119	119	1	1
	Phase 3 to Neutral	120	120	120	120	0	0
Feeder II	Phase 1 & 2	206	206	205	205	5	5
	Phase 2 & 3	207	207	207	207	0	0
	Phase 3 & 1	205	207	202	204	1.5	1.5
	Phase 1 to Neutral	120	120	119	119	1	1
	Phase 2 to Neutral	120	120	120	120	0	0
	Phase 3 to Neutral	120	120	120	120	0	0
Feeder III	Phase 1 & 2	206	206	205	205	1.5	1.5
	Phase 2 & 3	207	207	207	207	0	0
	Phase 3 & 1	205	207	203	205	1	1
	Phase 1 to Neutral	120	120	120	120	0	0
	Phase 2 to Neutral	120	120	120	120	0	0
	Phase 3 to Neutral	120	120	120	120	0	0

DATE 25 June 63

TESTER W. B. Bass

SUPERVISOR Walter Craig

QUALITY ASSURANCE W. B. Bass

Walter Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

BR11/105

STATION G.K.-G.A.

6. GENERATOR TRANSFER OPERATION (See Para. 12)

Generator I

	Normal Operating Conditions	Conditions New Duty Unit After Transfer
Voltage	<u>120</u>	<u>117</u>
Amperage	<u>325</u>	<u>295</u>
Wattage	<u>98 KW</u>	<u>70 KW</u>
Frequency	<u>60 CPS.</u>	<u>60 C.P.S.</u>

Time in Seconds to Effect Transfer 13 seconds.

Generator II

	Normal Operating Conditions	Conditions New Duty Unit After Transfer
Voltage	<u>118</u>	<u>118</u>
Amperage	<u>330</u>	<u>330</u>
Wattage	<u>95 KW.</u>	<u>95 KW.</u>
Frequency	<u>60 CPS.</u>	<u>60 C.P.S.</u>

Time in Seconds to Effect Transfer 13 seconds.

DATE 25 JUNE, 63.

TESTER George A. Bess

SUPERVISOR W. P. Bess

QUALITY ASSURANCE D. P. Bess

Walter Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW DIESEL GENERATING SYSTEM

BRII/106

STATION G.K.-G.A.

7. PARALLELING TEST (See Para. 13)

Generator I (After Paralleling)

Amps	<u>120</u>	Amps
Watts	<u>30 K</u>	Watts
Volts	<u>119</u>	Volts
Frequency	<u>60</u>	CPS
Tachometer Reading	_____	RPM

Generator II (After Paralleling)

Amps	<u>130</u>	Amps
Watts	<u>35 K</u>	Watts
Volts	<u>118</u>	Volts
Frequency	<u>60</u>	CPS
Tachometer Reading	_____	RPM

DATE 25 JUNE, 63

TESTER W. H. H. H.

SUPERVISOR W. H. H. H.

QUALITY ASSURANCE B. F. Bass.

Walter Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

BR11/101

STATION GA

1. FREQUENCY (See Para. 7)

Generator I

Name Plate Frequency 60 cps

A. Steady State Load

Minimum Frequency Reading 60 cps
Maximum Frequency Reading 60 cps

B. Sudden Change - Full Load to No Load

Minimum Frequency 59 cps
Maximum Frequency 61 cps
Recovery Time 3 Seconds

~~C. Sudden Change - No Load to Full Load~~

~~Minimum Frequency cps~~
~~Maximum Frequency cps~~
~~Recovery Time Seconds~~

Generator II

Name Plate Frequency 60 cps

A. Steady State Load

Minimum Frequency Reading 60 cps
Maximum Frequency Reading 60 cps

B. Sudden Change - Full Load to No Load

Minimum Frequency 59 cps
Maximum Frequency 61 cps
Recovery Time 3 Seconds

~~C. Sudden Change - No Load to Full Load~~

~~Minimum Frequency cps~~
~~Maximum Frequency cps~~
~~Recovery Time Seconds~~

DATE 12 July 1963

TESTER G. W. Malvern

SUPERVISOR R. L. Wainwright

QUALITY ASSURANCE W. B. Randall

GEETA Walter L. Craig

FEDERAL ELECTRIC CORPORATION BR11/102
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

STATION GA

2. LOAD BALANCE (See Para. 8)

Generator I	Test I	Test II(Corrected Unbalance)
Phase I		
Amperes	<u>355</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>42600</u>	<u> </u>
Phase II		
Amperes	<u>345</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>41400</u>	<u> </u>
Phase III		
Amperes	<u>340</u>	<u> </u>
Volts	<u>120</u>	<u> </u>
Volts x Amperes	<u>38400</u>	<u> </u>
Generator II		
Phase I		
Amperes	<u>340</u>	<u> </u>
Volts	<u>130</u>	<u> </u>
Volts x Amperes	<u>44200</u>	<u> </u>
Phase II		
Amperes	<u>345</u>	<u> </u>
Volts	<u>130</u>	<u> </u>
Volts x Amperes	<u>44850</u>	<u> </u>
Phase III		
Amperes	<u>315</u>	<u> </u>
Volts	<u>130</u>	<u> </u>
Volts x Amperes	<u>40950</u>	<u> </u>

DATE 11 July 1963

TESTER W. Mahan

SUPERVISOR Paul W. Wainwright

QUALITY ASSURANCE W. Mahan

GEEIA Walter Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATION SYSTEM

BRH/103

STATION GA

3. PHASING (See Para. 9)

Generator I

Phase I	<u>120</u> volts
Phase II	<u>120</u> volts
Phase III	<u>120</u> volts

Generator II

Phase I	<u>120</u> volts
Phase II	<u>120</u> volts
Phase III	<u>120</u> volts

4. NEUTRAL GROUNDING (See Para. 10)

Generator I

Ground Rod to Neutral Terminal .1 OHMS

Generator II

Ground Rod to Neutral Terminal .1 OHMS

DATE 12 July 1963

TESTER [Signature]

SUPERVISOR [Signature]

QUALITY ASSURANCE [Signature]

GEEIA [Signature]

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW DIESEL GENERATOR SYSTEM

BRH/104

STATION CA

5. TERMINAL VOLTAGE (See Para. II)

Percent Voltage Drop $\left(\frac{\text{Generator Panel Board Voltage} - \text{Terminal Voltage}}{\text{Generator Panel Board Voltage}} \times 100\% \right)$

		3 Phase 208 Volts					
		Generator Panel Board Volt.		Term. Volts		% Volt Drop	
		#1	#2	#1	#2	#1	#2
Feeder I	Phase 1 & 2	210	210	209	209	.18	.18
	Phase 2 & 3	210	210	210	210	0	0
	Phase 3 & 1	209	209	209	209	0	0
	Phase 1 to Neutral	120	120	120	120	0	0
	Phase 2 to Neutral	120	120	120	120	0	0
	Phase 3 to Neutral	120	120	120	120	0	0
Feeder II	Phase 1 & 2	210	210	209	209	.18	.18
	Phase 2 & 3	210	210	210	210	0	0
	Phase 3 & 1	209	209	209	209	0	0
	Phase 1 to Neutral	120	119	119	119	.83	0
	Phase 2 to Neutral	120	120	120	120	0	0
	Phase 3 to Neutral	120	120	120	120	0	0
Feeder III	Phase 1 & 2	210	210	209	209	.18	.18
	Phase 2 & 3	210	210	210	210	0	0
	Phase 3 & 1	209	209	209	209	0	0
	Phase 1 to Neutral	120	119	119	119	.83	0
	Phase 2 to Neutral	120	120	120	120	0	0
	Phase 3 to Neutral	120	120	120	120	0	0

DATE 12 July 1963

TESTER W. M. Hall

SUPERVISOR Paul J. Sawyer

QUALITY ASSURANCE Don Randall

GEEIA Walter K. Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW POWER GENERATING SYSTEM

BRII/105

STATION GA

6. GENERATOR TRANSFER OPERATION (See Para. 12)

Generator I

	Normal Operating Conditions	Conditions New Duty Unit After Transfer
Voltage	<u>120</u>	<u>120</u>
Amperage	<u>315</u>	<u>320</u>
Wattage	<u>116</u>	<u>125</u>
Frequency	<u>60</u>	<u>60</u>

Time in Seconds to Effect Transfer 11 seconds.

Generator II

	Normal Operating Conditions	Conditions New Duty Unit After Transfer
Voltage	<u>120</u>	<u>120</u>
Amperage	<u>317</u>	<u>310</u>
Wattage	<u>113</u>	<u>113</u>
Frequency	<u>60</u>	<u>60</u>

Time in Seconds to Effect Transfer 15 seconds.

DATE 12 July 1963
TESTER [Signature]
SUPERVISOR [Signature]
QUALITY ASSURANCE [Signature]
GEEIA [Signature]

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
150 KW DIESEL GENERATING SYSTEM

BRII/106

STATION GA

7. PARALLELING TEST (See Para. 13)

Generator I (After Paralleling)

Amps	<u>180</u>	Amps
Watts	<u>55K</u>	Watts
Volts	<u>120</u>	Volts
Frequency	<u>60</u>	CPS
Tachometer Reading	_____	RPM

Generator II (After Paralleling)

Amps	<u>190</u>	Amps
Watts	<u>60K</u>	Watts
Volts	<u>120</u>	Volts
Frequency	<u>60</u>	CPS
Tachometer Reading	_____	RPM

DATE 12 July 1963

TESTER W. M. Mohr

SUPERVISOR Paul J. Lancaster

QUALITY ASSURANCE W. M. Mohr

GEEIA W. M. Mohr

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET

BRH/111

60 KW POWER GENERATING SYSTEM

STATION GPA - System 1

FREQUENCY (See Para. 7)

Generator I

Name Plate Frequency 60 cps

A. Steady State Load

Minimum Frequency Reading 60 cps
Maximum Frequency Reading 60 cps

B. Sudden Change - Full Load to No Load

Minimum Frequency 59 cps
Maximum Frequency 61 cps
Recovery Time 2 Seconds

~~C. Sudden Change - No Load to Full Load~~

~~Minimum Frequency~~ ~~_____~~ cps
~~Maximum Frequency~~ ~~_____~~ cps
~~Recovery Time~~ ~~_____~~ Seconds

Generator II

Name Plate Frequency 60 cps

A. Steady State Load

Minimum Frequency Reading 60 cps
Maximum Frequency Reading 60 cps

B. Sudden Change - Full Load to No Load

Minimum Frequency 59 cps
Maximum Frequency 61 cps
Recovery Time 3 Seconds

~~C. Sudden Change - No Load to Full Load~~

~~Minimum Frequency~~ ~~_____~~ cps
~~Maximum Frequency~~ ~~_____~~ cps
~~Recovery Time~~ ~~_____~~ Seconds

DATE 12 July 1963

TESTER Ed Mahlan

SUPERVISOR Joseph Wenzel

QUALITY ASSURANCE J. Boucher

GEEIA Alister Craig

FEDERAL ELECTRIC CORPORATION

BRH/112

BIG RALLY II PROJECT

DATA SHEET

60 KW POWER GENERATING SYSTEM

STATION GPA- System #1

LOAD BALANCE (See Para. 8)

Generator I

	<u>Test I</u>	<u>Test II</u> (Corrected Unbalance)
Phase I		
Amperes	<u>150</u>	<u>128</u>
Volts	<u>120</u>	<u>120</u>
Volts x Amperes	<u>18000</u>	<u>15360</u>
Phase II		
Amperes	<u>100</u>	<u>129</u>
Volts	<u>120</u>	<u>120</u>
Volts x Amperes	<u>12000</u>	<u>15480</u>
Phase III		
Amperes	<u>118</u>	<u>130</u>
Volts	<u>120</u>	<u>120</u>
Volts x Amperes	<u>14160</u>	<u>15600</u>

Generator II

Phase I		
Amperes	<u>145</u>	<u>128</u>
Volts	<u>120</u>	<u>120</u>
Volts x Amperes	<u>17400</u>	<u>15360</u>
Phase II		
Amperes	<u>105</u>	<u>129</u>
Volts	<u>120</u>	<u>120</u>
Volts x Amperes	<u>12600</u>	<u>15480</u>
Phase III		
Amperes	<u>135</u>	<u>130</u>
Volts	<u>120</u>	<u>120</u>
Volts x Amperes	<u>16200</u>	<u>15600</u>

DATE 12 July 1963TESTER G. D. MallonSUPERVISOR Joseph W. KriggsQUALITY ASSURANCE R. BoucheyGEEIA Chacter L. Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
60 KW POWER GENERATING SYSTEM

BRH/113

STATION GPA- System #1

PHASING (See Para. 9)

Generator I

Phase I	<u>120</u>	volts
Phase II	<u>120</u>	volts
Phase III	<u>120</u>	volts

Generator II

Phase I	<u>120</u>	volts
Phase II	<u>120</u>	volts
Phase III	<u>120</u>	volts

NEUTRAL GROUNDING (See Para. 10)

Generator I

Ground Rod to Neutral Terminal .1 OHMS

Generator II

Ground Rod to Neutral Terminal .1 OHMS

DATE 12 July 1963

TESTER W. M. Mahlon

SUPERVISOR Joseph W. Wainwright

QUALITY ASSURANCE J. B. Boudier

GEEIA Walter L. Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
60 KW DIESEL GENERATOR SYSTEM

BRII/114

STATION GPA- System #1
MRC-85 East and West Vans

TERMINAL VOLTAGE (See Para. 11)

Percent Voltage Drop $\frac{(\text{Generator Panel Board Voltage} - \text{Terminal Voltage}) \times 100\%}{\text{Generator Panel Board Voltage}}$

	<u>Single Phase 208 Volts</u>		
	<u>Generator Panel Board Voltage</u>	<u>Terminal Volts</u>	<u>% Volt Drop</u>
Transformer I	<u>230</u>	<u>220</u>	<u>4.4</u>
Transformer II	<u>N/A</u>	<u>N/A</u>	

	<u>Three Phase 208 Volts</u>			<u>West Van</u>		<u>East</u>	
	<u>Generator Panel Board Voltage</u>			<u>Terminal</u>	<u>% Volt</u>		<u>%</u>
	<u>West</u>	<u>208</u>	<u>East 210</u>	<u>Volts</u>	<u>Drop</u>		
Phase 1 to 2				<u>204</u>	<u>2%</u>	210	0%
Phase 2 to 3		<u>208</u>	<u>210</u>	<u>207</u>	<u>5%</u>	210	0%
Phase 3 to 1		<u>207</u>	<u>208</u>	<u>207</u>	<u>0%</u>	205	1.5%
Phase 1 to Neutral		<u>120</u>	<u>118</u>	<u>117</u>	<u>2.5%</u>	118	1.7%
Phase 2 to Neutral		<u>120</u>	<u>118</u>	<u>119</u>	<u>1.9%</u>	118	1.7%
Phase 3 to Neutral		<u>120</u>	<u>120</u>	<u>119</u>	<u>1.9%</u>	120	0%

DATE 12 July 1963
TESTER C. J. Mullen
SUPERVISOR Joseph W. Wainwright
QUALITY ASSURANCE J. Bouchard
GEEIA Robert L. Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
60 KW POWER GENERATOR SYSTEM

BR11/115

STATION GPA- System #1

GENERATOR TRANSFER OPERATION (See Para. 12)

Generator I

	<u>Normal Operating Conditions</u>	<u>Conditions New Duty Unit After Transfer</u>
Voltage	<u>120</u>	<u>120</u>
Amperage	<u>140</u>	<u>142</u>
Wattage	<u>50 K</u>	<u>50 K</u>
Frequency	<u>60</u>	<u>60</u>
Time in Seconds to Effect Transfer	<u>15</u>	<u>Seconds.</u>

Generator II

	<u>Normal Operating Conditions</u>	<u>Conditions New Duty Unit After Transfer</u>
Voltage	<u>120</u>	<u>120</u>
Amperage	<u>142</u>	<u>150</u>
Wattage	<u>50 K</u>	<u>56 K</u>
Frequency	<u>60</u>	<u>60</u>
Time in Seconds to Effect Transfer	<u>4</u>	<u>Seconds.</u>

DATE 12 July 1963
TESTER W. M. Mullen
SUPERVISOR Joseph W. Wenzel
QUALITY ASSURANCE J. Bonch
GEEIA Walter Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
60 KW DIESEL GENERATING SYSTEM

BRII/116

STATION GPA-System #1

PARALLELING TEST (See Para. 13)

Generator I (After Paralleling)

Amps	<u>100</u>	Amps
Watts	<u>30 K</u>	Watts
Volts	<u>120</u>	Volts
Frequency	<u>60</u>	cps
Tachometer Reading	_____	RPM

Generator II (After Paralleling)

Amps	<u>100</u>	Amps
Watts	<u>28K</u>	Watts
Volts	<u>120</u>	Volts
Frequency	<u>60</u>	cps
Tachometer Reading	_____	RPM

DATE 12 July 63

TESTER C. W. Mahler

SUPERVISOR Joseph W. Winters

QUALITY ASSURANCE J. Brucher

GEEIA Walter L. Craig

FEDERAL ELECTRIC CORPORATION

BRH/111

BIG RALLY II PROJECT

DATA SHEET

60 KW POWER GENERATING SYSTEM

STATION GPA-System #2

FREQUENCY (See Para. 7)

Generator I

Name Plate Frequency 60 cpsA. Steady State LoadMinimum Frequency Reading 60 cpsMaximum Frequency Reading 60 cpsB. Sudden Change - Full Load to No LoadMinimum Frequency 59 cpsMaximum Frequency 61 cpsRecovery Time 3 Seconds~~C. Sudden Change - No Load to Full Load~~~~Minimum Frequency~~~~Maximum Frequency~~~~Recovery Time~~~~cps~~
~~cps~~
~~Seconds~~

Generator II

Name Plate Frequency 60 cpsA. Steady State LoadMinimum Frequency Reading 60 cpsMaximum Frequency Reading 60 cpsB. Sudden Change - Full Load to No LoadMinimum Frequency 59 cpsMaximum Frequency 61 cpsRecovery Time 2 Seconds~~C. Sudden Change - No Load to Full Load~~~~Minimum Frequency~~~~Maximum Frequency~~~~Recovery Time~~~~cps~~
~~cps~~
~~Seconds~~DATE 12 July 1963TESTER W. MahlonSUPERVISOR Joseph W. WenzelQUALITY ASSURANCE J. BoucherGEEIA Leuter L. Craig

FEDERAL ELECTRIC CORPORATION

BRH/112

BIG RALLY II PROJECT

DATA SHEET

60 KW POWER GENERATING SYSTEM

STATION GPA-System #2

LOAD BALANCE (See Para. 8)

Generator I

	<u>Test I</u>	<u>Test II</u> (Corrected Unbalance)
Phase I		
Amperes	<u>155</u>	<u>128</u>
Volts	<u>120</u>	<u>120</u>
Volts x Amperes	<u>21700</u>	<u>15360</u>
Phase II		
Amperes	<u>125</u>	<u>129</u>
Volts	<u>122</u>	<u>120</u>
Volts x Amperes	<u>15250</u>	<u>15480</u>
Phase III		
Amperes	<u>105</u>	<u>130</u>
Volts	<u>120</u>	<u>120</u>
Volts x Amperes	<u>12600</u>	<u>15600</u>

Generator II

Phase I		
Amperes	<u>150</u>	<u>128</u>
Volts	<u>120</u>	<u>120</u>
Volts x Amperes	<u>18000</u>	<u>15360</u>
Phase II		
Amperes	<u>105</u>	<u>129</u>
Volts	<u>120</u>	<u>120</u>
Volts x Amperes	<u>12600</u>	<u>15480</u>
Phase III		
Amperes	<u>120</u>	<u>130</u>
Volts	<u>120</u>	<u>120</u>
Volts x Amperes	<u>14400</u>	<u>15600</u>

DATE 12 July 1963TESTER W. MahlonSUPERVISOR Joseph W. WainwrightQUALITY ASSURANCE J. BrucherGEEIA Walter L. Craig

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
60 KW POWER GENERATING SYSTEM

BRH/113

STATION GPA-System #2

PHASING (See Para. 9)

Generator I

Phase I	<u>120</u>	volts
Phase II	<u>122</u>	volts
Phase III	<u>120</u>	volts

Generator II

Phase I	<u>120</u>	volts
Phase II	<u>120</u>	volts
Phase III	<u>120</u>	volts

NEUTRAL GROUNDING (See Para. 10)

Generator I

Ground Rod to Neutral Terminal .1 OHMS

Generator II

Ground Rod to Neutral Terminal .1 OHMS

DATE 12 July 1963

TESTER Thomalla

SUPERVISOR Joseph H. Manigault

QUALITY ASSURANCE J. Bouchard

GEEIA Antoine L. Bray

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
60 KW DIESEL GENERATOR SYSTEM

BRII/114

STATION GPA System #2

TERMINAL VOLTAGE (See Para. 11)

Percent Voltage Drop $\left(\frac{\text{Generator Panel Board Voltage} - \text{Terminal Voltage}}{\text{Generator Panel Board Voltage}} \right) \times 100\%$

Single Phase 208 Volts

	<u>Generator Panel Board Voltage</u>	<u>Terminal Volts</u>	<u>% Volt Drop</u>
Transformer I	<u>230</u>	<u>220</u>	<u>4.4%</u>
Transformer II	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Three Phase 208 Volts

	<u>Generator Panel Board Voltage</u>		<u>West Terminal Volts</u>	<u>West % Volt Drop</u>	<u>East T.V.</u>	<u>East % Drp</u>
	<u>West</u>	<u>East</u>				
Phase 1 to 2	208	210	204	2%	210	0%
Phase 2 to 3	208	210	207	.5%	210	0%
Phase 3 to 1	207	208	207	0%	205	1.5%
Phase 1 to Neutral	120	120	117	2.5%	118	1.7%
Phase 2 to Neutral	120	120	119	1.9%	118	1.7%
Phase 3 to Neutral	120	120	119	1.9%	120	0%

DATE 13 July 63

TESTER Ed M. Mahlon

SUPERVISOR Joseph W. Wagoner

QUALITY ASSURANCE J. Boucher

GEETA Walter L. Gray

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
60 KW POWER GENERATOR SYSTEM

BR11/115

STATION GPA-System #2

GENERATOR TRANSFER OPERATION (See Para. 12)

Generator I

	<u>Normal Operating Conditions</u>	<u>Conditions New Duty Unit After Transfer</u>
Voltage	<u>120</u>	<u>120</u>
Amperage	<u>140</u>	<u>135</u>
Wattage	<u>51K</u>	<u>46K</u>
Frequency	<u>60</u>	<u>60</u>

Time in Seconds to Effect Transfer 11 Seconds.

Generator II

	<u>Normal Operating Conditions</u>	<u>Conditions New Duty Unit After Transfer</u>
Voltage	<u>120</u>	<u>120</u>
Amperage	<u>135</u>	<u>138</u>
Wattage	<u>45K</u>	<u>48K</u>
Frequency	<u>60</u>	<u>60</u>

Time in Seconds to Effect Transfer 8 Seconds.

DATE 12 July 1963
TESTER W. M. L.
SUPERVISOR Joseph W. Wainwright
QUALITY ASSURANCE J. B. Bouchier
GEETA Robert L. Craig

FEDERAL ELECTRIC CORPORATION

BRH/116

BIG RALLY II PROJECT

DATA SHEET

60 KW DIESEL GENERATING SYSTEM

STATION GPA-System #2

PARALLELING TEST (See Para. 13)

Generator I (After Paralleling)

Amps	<u>90</u>	Amps
Watts	<u>28K</u>	Watts
Volts	<u>120</u>	Volts
Frequency	<u>60</u>	cps
Tachometer Reading	_____	RPM

Generator II (After Paralleling)

Amps	<u>80</u>	Amps
Watts	<u>26K</u>	Watts
Volts	<u>120</u>	Volts
Frequency	<u>60</u>	cps
Tachometer Reading	_____	RPM

DATE 12 July 1963

TESTER Ed M. Miller

SUPERVISOR Joseph W. King

QUALITY ASSURANCE J. Bouchet

GEEIA Alfred L. King

8-60

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
20 KW POWER GENERATING SYSTEM

BRII/121

STATION GEL

FREQUENCY (See Para. 7)

Generator I

Name Plate Frequency 60 cps

A. Steady State Load

Minimum Frequency Reading 60 cps
Maximum Frequency Reading 60 cps

B. Sudden Change - Full Load to No Load

Minimum Frequency 59 cps
Maximum Frequency 61 cps
Recovery Time 2 Seconds

~~C. Sudden Change - No Load to Full Load~~

~~Minimum Frequency cps~~
~~Maximum Frequency cps~~
~~Recovery Time Seconds~~

Generator II

Name Plate Frequency 60 cps

A. Steady State Load

Maximum Frequency Reading 60 cps
Maximum Frequency Reading 60 cps

B. Sudden Change - Full Load to No Load

Minimum Frequency 59 cps
Maximum Frequency 61 cps
Recovery Time 3 Seconds

~~C. Sudden Change - No Load to Full Load~~

~~Minimum Frequency cps~~
~~Maximum Frequency cps~~
~~Recovery Time Seconds~~

DATE 17 July 1963

TESTER S.W. Mahlen

SUPERVISOR Andrew J. Horvath

QUALITY ASSURANCE J. Bonchert

GEEIA Robert L. Esig

8-61

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
20 KW POWER GENERATING SYSTEM

BRII/122

STATION GEL

PHASING (See Para. 8)

Generator I

Position I 240 Volts
Position II 120 Volts

Generator II

Position I 240 Volts
Position II 120 Volts

NEUTRAL GROUNDING (See Para. 9)

Generator I

Ground Rod to Neutral Terminal .1 OHMS

Generator II

Ground Rod to Neutral Terminal .1 OHMS

DATE 17 July 1963

TESTER C.W. Mahlen

SUPERVISOR Andrew F. Barrett

QUALITY ASSURANCE Barker
GEEIA Walter L. Gray

8-62

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
20 KW POWER GENERATOR SYSTEM

BRH/123

STATION GEL

TERMINAL VOLTAGE (See Para. 10)

Percent Voltage Drop $\frac{(\text{Generator Panelboard Voltage} - \text{Terminal Voltage}) \times 100\%}{\text{Generator Panelboard Voltage}}$

Single Phase 240 Volts

<u>Generator Panelboard Volt.</u>	<u>Term. Volts</u>	<u>% Volt Drop</u>
<u>240</u>	<u>238</u>	<u>.9%</u>

TRC-35
-MRC-80

Single Phase 120 Volts

<u>Generator Panelboard Volt.</u>	<u>Term. Volts</u>	<u>% Volt Drop</u>
<u>120</u>	<u>119</u>	<u>.9%</u>
<u>120</u>	<u>120</u>	<u>0%</u>

TRC-35
-MRC-80

Line 1 to Neutral
Line 2 to Neutral

DATE 17 July 1963
TESTER C.W. Mahlen
SUPERVISOR Andrew J. Horvath
QUALITY ASSURANCE J. Boncker
GEEIA Victor L. Craig

8-63

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
20 KW POWER GENERATING SYSTEM

BRII/124

STATION GEL

GENERATOR TRANSFER OPERATION (See Para. 11)

Generator I

	Normal Operation Conditions	Conditions New Duty Unit After Transfer
Voltage	<u>240</u>	<u>240</u>
Amperage	<u>100</u>	<u>90</u>
Wattage	<u>20,000</u>	<u>21,000</u>
Frequency	<u>60</u>	<u>60</u>

Time in Seconds to Effect Transfer 12 Seconds.

Generator II

	Normal Operation Conditions	Conditions New Duty Unit After Transfer
Voltage	<u>240</u>	<u>240</u>
Amperage	<u>89</u>	<u>100</u>
Wattage	<u>21,000</u>	<u>20,000</u>
Frequency	<u>60</u>	<u>60</u>

Time in Seconds to Effect Transfer 8 Seconds.

DATE 17 July 1963
TESTER W. H. Hall
SUPERVISOR Andrew J. Horvath
QUALITY ASSURANCE A. Brucher
GEEIA DeMiter & Craig

8-64

FEDERAL ELECTRIC CORPORATION
BIG RALLY II PROJECT
DATA SHEET
20 KW DIESEL GENERATING SYSTEM

BRH/125

STATION GEL

PARALLELING TEST (See Para. 12)

Generator I (After Paralleling)

Amps	<u>30</u>	Amps
Watts	<u>6K</u>	Watts
Volts	<u>238</u>	Volts
Frequency	<u>60</u>	cps
Tachometer Reading	_____	RPM

Generator II (After Paralleling)

Amps	<u>30</u>	Amps
Watts	<u>6K</u>	Watts
Volts	<u>238</u>	Volts
Frequency	<u>60</u>	cps
Tachometer Reading	_____	RPM

DATE 17 July 1963

TESTER *Admiral*

SUPERVISOR *Andrew J. Morris*

QUALITY ASSURANCE *J. Bouchard*

GEEIA *Victor L. Craig*

8-65

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